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ABSTRACT

A study was sponsored by the Office of the Chancellor of the California Community Colleges to: (1) document and analyze the information needs of various groups (e.g., the legislature, state agencies, and community colleges) with respect to the state's community colleges and to prepare a matrix of information needs and uses; (2) inventory the information currently available in the Chancellor's Office and evaluate its usefulness in meeting these information needs; (3) assist the Chancellor's Office's Users and Technical Design Committees in identifying and defining data elements required to meet these needs; and (4) recommend changes in the existing information system and consider requirements for new or additional information. Data sources for the study included documents available within the Chancellor's Office and interviews conducted with community college unit administrators and representatives of appropriate external entities. The study revealed problems related to poor data quality due to lack of conscientious reporting, and to ambiguity or inconsistency in data element definitions; the inability to do longitudinal studies; failure to meet data needs due to an inability to link data sets; lack of data use; lack of outcome measures; high costs of data collection; and lack of confidence in a coordinated information system. Based on study findings, recommendations were developed concerning management and review mechanisms, modifications of the existing data system, and the improved use of information. (EJV)

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DEVELOPMENT OF AN INTEGRATED INFORMATION SYSTEM

(Presented to Chancellor's Office for California Community Colleges)

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September 20, 1985

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DEVELOPMENT OF AN INTEGRATED INFORMATION SYSTEM

(Presented to Chancellor's Office for
California Community Colleges)

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TABLE OF CONTENTS

		Page
EXECUTIVE SUMMARY	. . . . .	i
Chapter I:	Introduction	1
Chapter II:	Findings and Discussion	6
	Existing Data.	6
	User Needs.	10
Chapter III:	Recommendations.	36
Appendix A:	Existing Data	
Appendix B:	Use of Existing Data	
Appendix C:	Issues and Discussions from Users	
Appendix D:	User Requests to CCC	

EXECUTIVE SUMMARY

DEVELOPMENT OF AN INTEGRATED INFORMATION SYSTEM

Purpose

This study concerns the development of a comprehensive information system within the state-level Chancellor's Office of the California Community Colleges. Specifically, Educational Evaluation Associates were asked to:

(1) document and analyze the needs of various users—the Chancellor's Office, the legislature, the Department o Finance, community colleges, the California Postsecondary Education Commission, and other external agencies—for community college information; and prepare a matrix of information needs and uses;

(2) inventory the information currently available in the Chancellor's Office, including its sources and origins, and evaluate its usefulness in meeting these information needs;

(3) assist the Users Committee and the Technical Design Committee in identifying and defining the data elements required to meet these above needs; and

(4) recommend changes in the existing information system and consider requirements for new or additional information.

This study represents an impartial examination of the current status of information systems in the Chancellor's Office. Based upon data from observations and discussions, a number of recommendations are made.

Methodology

The study was concerned with categorizing all data currently available at the Chancellor's Office, indicating their uses, specifying additional data needs, and identifying problems with the existing system. Data sources included documents available in the Chancellor's Office, and interviews conducted with CCC unit administrators as well as with representatives of appropriate external entities. These interviews were designed to elicit information on the data elements currently available within the Chancellor's Office, to obtain evidence of data use, and to provide insights into existing issues and new data needs.

A broad-based Users Committee that included representatives of community colleges and various state agencies provided further input into current data integration problems. It also helped to synthesize study data and to develop recommendations. Indeed, the recommendations which are a part of this report were developed jointly by the Users Committee and the evaluation consultant.

Current Concerns

The following are current concerns about the data collected and maintained by the Chancellor's Office:

Poor data quality due to lack of conscientious reporting

Poor data quality, due to ambiguity or inconsistency in data element definitions

Inability to do longitudinal studies

Failure to meet data needs due to inability to link data sets

Lack of data use, both within CCC and in the field

Lack of outcome measures

High costs of data collection

Vested interests of CCC units and lack of confidence in a coordinated information system.

Recommendations

Management and Review Mechanisms

(1) Establish an agencywide mechanism or authority to manage and be responsible for administering efforts to modify the system, determining timelines for reports, establishing data validation procedures, developing data files linkage capabilities, providing inservice training, and so forth. (See pp. 36-40)

(2) Establish mechanisms for reviewing all changes in the data system. (See pp. 40-41)

   (a) Establish a mechanism at the Chancellor level for reviewing progress and overall changes.

   (b) Initiate ad hoc committees, representing appropriate constituencies, to provide comments and suggestions on specific recommended changes.

Modifications of Data System

(3) Develop and implement a system of unique identifiers (Social Security numbers) for students, with appropriate procedures to protect privacy. (See pp. 42-43)

(4) Modify student, staff, and facilities data elements on the basis of their current and potential utility. (See pp. 43-48)

   (a) Delete the following data elements which are not used: the student data elements Veterans' Aid Status and VEA Funding for Disadvantaged Students, the staff data elements Additional Time Required on Campus, Required Office Hours, and Categorical/Contracted Assignment.

   (b) Standardize reporting the following data elements: Student Declared Major and Student Goal.

(c) Require reporting of the data element Student Goal.

(d) Examine elements in the staff data file to reach agreement on common definitions and aggregation procedures.

(e) Re-examine elements in the facilities data files to determine which are not widely used.

(f) Identify overlapping or duplicate elements created as a result of introducing a unique identifier and establish an administrative procedure to determine which elements to eliminate.

(5) Expand the outcome measures in the integrated information system. (See pp. 48-49)

(a) Include in the student data file of USRS the following additional elements: Units Completed, GPA for Year, Cumulative GPA, Degrees (AA) Awarded, and Certificates Awarded.

(b) Consider an expanded range of appropriate outcome measures and special surveys.

Improved Information Use

(6) Develop procedures to increase the use of information contained within the data base and to demonstrate the relevance of the information to the colleges which provide it. (See pp. 49-52) For example:

(a) Demonstrate the focus on use by including a note on each information request and report indicating the intended uses and users of the data.

(b) Produce more reports for distribution to colleges (including simple descriptive summaries).

(c) Produce a yearly report (for distribution to colleges) detailing the reports generated or the information needs met using existing data files.

(d) Coordinate all information requests to CCC through a single unit.

CHAPTER I

INTRODUCTION

As early as 1974, the Board of Governors of the California Community Colleges (CCC) acknowledged the need for a comprehensive information system within the Chancellor's Office. It was felt that such a system could "develop automated procedures to coordinate, integrate, replace and/or eliminate as many . . . separate reporting procedures as possible" (Users Manual, 1981). This need has been reaffirmed by the Board of Governors in its 1985 Basic Agenda which states that "a comprehensive and integrated data system will be developed with the provision of data being mandatory and with districts being reimbursed for their costs of reporting " (p. 66).

Purpose

While some efforts have been made over the last decade to develop a comprehensive system, much remains to be done. Therefore, the Analytical Studies Unit (ASU), which is responsible for the maintenance of the Uniform Statewide Reporting System (USRS), the core information base of such a system, initiated the present study for the purpose of exploring further steps in the potential integration of the system. Educational Evaluation Associates (EEA) was contracted to conduct the study within a three-month period.

In our initial meetings with ASU staff, the discussion revolved around the data system currently available at the Teale Data Center (Teale) as a first

approximation of an integrated information system ("Phase I"). EEA was charged with examining this Phase I data system and making suggestions for appropriate additions and deletions to that system for "Phase II."

EEA's interpretation of its responsibilities over this period resulted in specification of the following tasks:

- To document and analyze the needs of various users--the Chancellor's Office, the legislature, the Department of Finance, community colleges, the California Postsecondary Education Commission, and other external agencies--for community college information; and to prepare a matrix of information needs and uses;
- To inventory the information currently available in the Chancellor's Office, including its sources and origins, and to evaluate its usefulness in meeting these needs;
- To assist the Users Committee and the Technical Design Committee in identifying and defining the data elements required to meet these above needs;
- To recommend changes in the existing information system and to consider requirements for new or additional information; and
- To assist in preparing a Request for Proposal (RFP) for a cost-benefit study of information alternatives.

The purpose of this study can be stated more succinctly. As one member of the study's Steering Committee put it: "We need a thoughtful, external look at current and potential data--to tell us what is needed regularly, what is needed sometimes, and what may not be needed at all." Throughout this study, we have

attempted to provide such a thoughtful, external look. Our recommendations are based upon data derived from observations and discussions and are guided by our own expertise.

The suggestions and recommendations made in this report are not altogether new. Concern about these issues is evident in many of the documents produced by the Chancellor's Office over a period of years. What is new--and perhaps what is needed--is an external evaluation that consolidates these analyses and puts forth these recommendations in one place. It is hoped that the visibility of this effort will inspire more forceful action, leading to greater integration of data systems in the years to come.

Methodology

The study reported here was concerned with categorizing all data currently available on computer at the Chancellor's Office, indicating their uses, specifying additional data needs, and identifying problems with the existing system. All of this information then had to be synthesized in a comprehensive matrix of data needs and uses in order to develop recommendations for further integrating the information system.

Much of the information for this report came from various documents in the Chancellor's Office. Contributing most to our initial understanding of the data at the Teale Data Center was the Data Element Dictionary (1985), which describes each of the data files and associated data elements in the USRS system. The USRS Manual (1981), which describes other data collected by various units of the Chancellor's Office and available at Teale, was also very helpful. In addition, a variety of other documents proved to be valuable in

conducting the study: publications of units in the Chancellor's Office (e.g., Master Plan and Inventory of Programs), reports of previously conducted studies (e.g., A Plan for Implementing a Differential Cost Funding System, and Planning and Future-Study), and a number of internal documents such as presentations to the Board of Governors (e.g., Evaluating Community College: A FIPSE Proposal, Comprehensive Planning), which described ongoing projects and activities and thereby provided insights into required changes in the information system.

But interviews were the primary source of data for this study. The EEA evaluation team interviewed members of two constituent groups: unit administrators within CCC and representatives of appropriate external entities. The first function of these interviews was to elicit information on the data elements currently available on computers within the Chancellor's Office. This information enabled us to prepare a data matrix listing the various data elements and indicating how each was acquired, which unit was responsible for it, and how it was used (see Appendices A and B). In conducting this phase of the interview, EEA staff used a semistructured format.

The interviews had a second, more open-ended function: to ascertain the interviewees' perceptions of what additional information should be included in the CCC information system and of what important questions the present system could not answer. Data from interviews with the representatives of external agencies are presented in Appendix Table C-2. Data from interviews with CCC unit administrators are presented in Appendix D. These data focus on the specific information requests made by external agencies for which no appropriate data were available or information requests of other units within the Chancellor's Office which could not be satisfied.

Review, comment, and additional insights into the information needs of constituent groups was provided through the mechanism of a Users Committee. This broad-based group included representatives of many different units within the Chancellor's Office, as well as representatives of the California Post-secondary Education Commission, the Department of Finance, the legislature, the California State University System, the University of California, and community colleges throughout the state. The community college representatives included individuals associated with personnel matters, budget, data processing, EOPS, HSPS, financial aid, admissions, and other community college interests and functions.

In addition to giving their views on information needs, members of the Users Committee provided expert assistance in synthesizing study data and formulating recommendations. The technical feasibility of certain ideas and recommendations was considered by a technical advisory committee and conveyed to us through Buster Sano. Finally, the Information Systems Steering Committee reviewed draft materials at various stages and offered its direction. Thus, the recommendations (see Chapter III) represent a joint effort by the EEA team and a variety of individuals. We hope that this evidence of broad-based support will increase the impact of the report and its recommendations.

Review drafts of this report were distributed to members of various committees, representatives of external agencies, appropriate legislative staff persons, and CCC unit heads. We particularly appreciate the important feedback provided by Ron Dyste and Lucy Sands, Anita Eblé, Fred Klass, Chuck McIntyre, Tom Nussbaum, Buster Sant, Ron Spalter and Paul Steed.

CHAPTER II

FINDINGS AND DISCUSSION

The findings from the study are presented in two main sections, the first on existing data and the second on user needs.

Existing Data

The Chancellor's Office of the California Community Colleges (CCC) collects a wide variety of information about constituent colleges. The Analytical Studies Unit (ASU) within the Chancellor's Office collects data primarily through the Uniform Statewide Reporting System (USRS), the principal source of information about the current status of community colleges. At least five other operating units in the Chancellor's Office also request information from the colleges: the Fiscal Unit, the Facilities Unit, the Program Evaluation and Approval Unit, the Vocational Education Unit, and the Student Services/Specially Funded Projects Unit (SS/SPF) which comprises two primary activities, Extended Opportunity Programs and Services (EOPS) and Handicapped Students Programs and Services (HSPS) along with other student service functions.* Rather than relying completely on USRS, however, these other units collect data through several procedures: they request colleges to submit annual reports and update forms, they examine the applications and plans submitted by colleges, and they conduct ad hoc surveys on topics of interest.

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*For purposes of this study, we focused on the main operating units of CCC that obtain data from colleges. Units concerned with internal operations (e.g., internal budget, personnel, credentials) were excluded. Information collected by the Affirmative Action Unit also was not examined.

The USRS, which is stored at the Teale Data Center, comprises four major data files: students, staff, course activity, and global data (see Figure 1). There are four types of student data: general descriptive data (based upon the results of the First Census Enrollment report), Vocational Student Enrollment, EOPS, and HSPS data (collected at term end). The staff file covers those employees who are certificated personnel employed during the Fall term. The course activity file represents term-end reporting. The global data file includes general identifying information for the college, the district, the student, or the program.

FIGURE 1

USRS DATA FILES

Student Data

- First Census Enrollment
- Vocational Student Enrollment
- EOPS Data
- HSPS Data

Staff Data

Course Data

- Course Activity Measures

Global Data

The Analytical Studies Unit validates all of the data collected through USRS according to the definitions and specifications set forth in the Data Element Dictionary. When necessary, districts are requested to make corrections. After data have been validated and corrected, they are stored at Teale and are available for analysis.

The USRS data are collected on a unit record basis. The unit may be a student, a staff member, or a course. The unit record contains the raw data elements for that particular unit. In the case of student data, for example, there is one record for each student at a college, and it contains information on "those characteristics such as age, race, sex, residence, class load, and the like, which pertain to that individual" (Users Manual, 1981). Similarly, there is one record for each staff member, one record for each course, and so forth. Unit records based upon raw data elements allow analyses which would not be possible if the data were aggregated. On the other hand, not all of the student record files have unique identification numbers, so longitudinal studies and cross-data-set analyses cannot be performed.

Some data collected by other units in the Chancellor's Office are also available at the Teale Data Center. The Program Evaluation and Approval Unit maintains a Program Inventory, a Course Inventory, and a Non-credit Inventory at Teale. Data for the Program Inventory and the Non-credit Inventory come from information provided by the colleges when they submit a program approval application to the unit. The Course Inventory file is updated each year with information acquired through the USRS and with other data received by the unit.

Both the Facilities and the Fiscal units also maintain large data sets at Teale. The primary source of facilities data is the Space Inventory which colleges complete each year and which asks for information on room and building use, condition of facilities, assignable square feet, and so forth. The Fiscal Unit receives various report forms from colleges, the most important being the Student Attendance Report (CCFS 320). The unit maintains data related to income and expenditures as well as to apportionment.

Appendix Table A-1 lists the data available at the Teale Data Center, along with the data elements in each set, its administrative location, and its source. Appendix Table A-2 lists additional data files derived by combining items from the basic USRS data set. For example, the Average Census Enrollment data file (CE1) was created by averaging data from the First and Second Census, and the Weekly Student Contact Hours data file (WSCH) was derived from several data elements: total section contact hours, total student contact hours, and average census enrollment.

Units within CCC also collect data either from reports regularly submitted to them or from special surveys. However, these data are available only on the various unit microcomputer systems and cannot currently be emerged with data files at Teale. They fall into several categories. The Specially Funded Programs Unit maintains program and cost data for HSPS and EOPS projects on its Datapoint system. Data on the projects of the Vocational Education Unit are kept on the unit's own IBM computer system as well as in the computers of consultants charged with responsibility for conducting special studies; the unit also collects and maintains data through the State Department of Education. Appendix Table A-3 describes some of these other CCC data sets and special

surveys, but because of the number of different computer systems within CCC, the list is probably incomplete.

User Needs

The full description of existing data is one aspect of a data matrix; the identification of user needs is a second component. Our analysis of user needs involved four steps: ascertaining what use is made of existing data; soliciting the opinions and suggestions of users as to common problems and their possible solutions; reviewing requests for information to determine which kinds of requests cannot be met by existing data; and reviewing earlier studies and other activities relevant to the development of an integrated data system.

Use of Existing Data

After we had identified the data files available at the Teale center, we attempted to determine the extent to which these data are used either within the Chancellor's Office or by external agencies. In essence, we wanted to develop a matrix displaying how information is used.

As we mentioned in Chapter I, we interviewed administrators in each unit of CCC that maintained computerized data. These interviews constituted the first round in the interviewing process. With respect to USRS data, the interviewees included personnel from the Analytical Studies Unit (ASU) and from other units with an interest in particular USRS data sets. Thus, personnel from the Specially Funded Programs Unit were interviewed about their use of EOPS data. With respect to other (non-USRS) data, we interviewed personnel at the administrative unit responsible for collecting the data set. Thus, personnel from

the Fiscal Unit were asked for information about data related to apportionment, income, and expenditures.

Each interviewee was asked whether a particular data element was used by his or her unit and, if so, for what purpose. In some cases, the response indicated that the data element is used by the CCC unit for planning or administrative purposes; in other cases the data element is used in preparing a product or report. We also asked the interviewees which external agencies receive and use each data element. That is, what were their perceptions about the use of data by various external agencies. Their responses indicated that presumed use is of several types. In some instances, the external agency directly requested the information. In other instances, the CCC unit prepares a report which incorporates a particular data element, and the report is presumably used by an external agency. In still other instances, the external agency has access to the data files and does calculations and analyses which depend upon the particular data element. Thus, this round of interviews gave us some ideas of the extent to which the various data elements are used both within the CCC units and by external agencies, although their uses by external agencies is a matter of presumption.

The second round of interviews was aimed at verifying external data use. For this portion of the study, EEA staff interviewed representatives of the external state agencies most frequently mentioned during the first round: CPEC, the Department of Finance, and several offices of the state legislature. Certain federal agencies--notably the Equal Employment Opportunity Commission and the Vocational Education Unit of the U.S. Department of Education--were also frequently mentioned as users of the data, but we did not have enough

resources to interview their representatives. However, since external reporting to these agencies usually takes the form of preparing required federal reports, and since these reports are in fact completed and seem to be accepted as satisfactory, we feel safe in assuming that they are read by the relevant federal agencies and that external use of the data is thus verified. The data use matrix found in Appendix Table B-1 shows the presumed uses of the data files, and verification of such use, as indicated by these interviews.

Student data. Of the student files in USRS, the most heavily used--both within the CCC office and by external agencies--seem to be those data related to First Census Enrollment. For instance, the Department of Finance uses these data in its projections for space requirements, and in special analyses such as the study of "feed flow." CPEC uses them not only for regular analyses but also for various federal surveys and special studies.

Several data elements seem to get virtually no use. For instance, first-round interviewees believed that CPEC makes use of the element High School Education (which indicates whether a student has a high school diploma, a GED, a Certificate of Completion, etc.), but interviews with CPEC members revealed that this is not the case. Similarly, interviewees within the CCC thought that Veterans' Aid Status was a data element used by the Department of Finance, but representatives of the department said they do not use it. Thus, some student data elements presently seem to have dubious value.

Others are not currently used but are nonetheless regarded as having great potential value to external agencies. For example, the Student Declared Major and the Student Goal elements were both viewed as potentially valuable to CPEC and the legislature, though neither is currently being used: the first because the

colleges employ local codes for Student Declared Major that make statewide analysis inappropriate, the second because reporting is optional and only 30 percent of the colleges provide this information.

The Vocational Student Enrollment portion of the USRS student data files is used to satisfy federal reporting requirements. Indeed, practically all these data are required for the U.S. Office of Education's Vocational Education Data Systems (VEDS) Report. Within the CCC office, they are used primarily in the allocation formula and in the program approval process. The only data element for which we were unable to determine a use was VEA Funding for Disadvantaged Students.

The EOPS student data, along with the HSPS student data, are used both administratively within the CCC and by the legislature. Interviewees from Specially Funded Programs mentioned a number of administrative and planning uses of the data within their unit. They also said that the legislature has an interest in these data. Our interviews with legislative staff persons confirmed this view. Indeed, one legislative staff member noted that the data are collected "in response to legislative and control agency requests for descriptive data."

Staff data. USRS staff data files are used for the CCC's Annual Report on Staffing and Salaries, which community college districts refer to in the collective bargaining process. In addition, CPEC uses many of these data in completing the federal EEO-6 report to the EEOC and in preparing Faculty Salaries. The Chancellor's Office also uses a number of these data elements in its annual studies of part-time faculty and college compliance with the 50 percent law.

Some staff data elements are not used either by the Chancellor's Office or by external agencies. Thus, they are candidates for potential deletion from the system. In particular, the optional item Additional Time Required on Campus produces incomplete data and is not used, and the same is true of Required Office Hours. The data element indicating whether a staff member has a categorical or contract assignment also seems to go unused.

Course data. The third category within the USRS system, course data, comprises various course activity measures. The Chancellor's Office uses these data in a number of ways: e.g., in the program approval process, in the annual update of the Course Inventory, which is maintained as a file within the Teale Data Center.

Two other inventories are maintained by the Program Approval and Evaluation Unit of CCC and are also available at Teale: The Non-credit Inventory and the Program Inventory are both used for management purposes within the Program Evaluation and Approval Unit. In addition, the unit uses the Program Inventory to produce a Master Plan and Inventory of Programs. These inventories are a valuable resource for external agencies as well: For instance, both are available to the Department of Finance as an audit base for college programs.

Facilities data. The data maintained at Teale by the Facilities Unit are derived primarily from the detailed Space Inventory which the unit sends out to colleges each year. The Facilities Unit uses these data in preparing a number of publications which summarize information on facilities and thus are probably valuable in promoting understanding of the facilities available throughout the state. Some of these publications are developed simply from data within the

inventory (e.g., Room Use Summary), while others combine facilities data with information from other data sets (e.g., Program Summary by Room Use). Interviewees from external agencies reported only limited use of facilities data. However, the districts use the publication Discipline List/Sequenced Room Use in preparing their five-year construction plans.

Fiscal data. The fiscal data files stored at Teale are of several types. Student attendance data derived from the 320 form and its amendments are used in deriving general apportionment estimates, a use confirmed by the Department of Finance. The CCC Fiscal Unit uses income and expenditure data to perform certain program analyses required by law and to prepare the Fiscal Data Abstract. Similarly, the Controller's Office uses annual financial and budget data for the publication Financial Transactions.

Other data sets. Several valuable data sets derived from special surveys and reports regularly submitted to CCC units are not merged with the Teale files (see Table B-2). Available only on microcomputers within individual CCC units, they have limited circulation.

These special data files are often used to support fiscal and program decisions; to determine budget allocations; to retrieve funds; or to monitor specially funded projects.

Some of these non-Teale data files are commonly used to prepare reports for state and federal decisionmakers. For example, the Vocational Education Unit supplies the U.S. Department of Education and the state legislature with VEA Accountability Data, VEA State Planning Data, and the Evaluation of Vocational Education Programs and Services reports. VEA data files are also used by the State Department of Education to validate the state's three-year plan for vocational education.

Suggestions from Users

The Users Committee met four times between April and June 1985 to discuss several issues (see Appendix C-1), a number of which were also raised during interviews with external users (see Appendix C-2). Both groups agreed that chronic problems impede data utilization within the CCC: Collection procedures are not uniform; there are no common identifiers to facilitate data integration and longitudinal research; districts differ in their definitions of some data elements, making common interpretations difficult if not impossible. Moreover, because of differences in the procedures used to aggregate data, the numbers in a report from the Chancellor's Office may not mean the same thing as the numbers in a report produced by one of the local offices. Even the timeliness of data reporting has been criticized by representatives of CPEC and other state agencies. For example, although enrollment data are due by January 1, some community colleges take until April to respond. As of the end of May 1985, data from eight schools were still missing. Simply stated, if information is not accessible, it will not be used.

In a climate where public agencies are increasingly required to justify their expenditures by offering evidence of outcomes, it behooves the CCC to centralize and integrate its information system. As one college official stated: "We have to have valid data to support our financial requests and to justify what we are doing on the outcome side."

Everyone agrees that most of these problems can be solved if administrative action is taken to encourage data integration and if resources are provided to facilitate data linkages. The chief issues noted by users are as follows: (1) a common identifier, (2) file integration and data compatibility,

(3) the quality of data elements, (4) data elements in staff files, (5) duplication in reporting, (6) reporting burdens, (7) feedback and data use, (8) outcomes data, (9) adequate resources, and (10) general management. In the rest of this section these issues are explored in more detail, and possible solutions to problems are suggested.

Common Identifier. Most users are less concerned with adding new data elements or eliminating redundant elements than with utilizing more efficiently the data files that already exist. Throughout the CCC system, large quantities of data are routinely collected. Even so, districts are frequently besieged with time-consuming special requests for information, requests that they respond too slowly, if at all. Both internal and external users agree that information retrieval would be greatly facilitated if one additional data element were introduced systemwide. That element is a unique student identification code. With such a student identifier, many of the information requests to the Chancellor's Office that currently go unmet could easily be met.

Representatives of the Chancellor's Office, the community colleges, CPEC, and the Department of Finance concurred that any procedures for establishing a unique identifying code for individual students should be adopted universally throughout the CCC. A spokesperson for the California State Universities said that his institution would be interested in cooperating with the community colleges in establishing a common student identifier. With a universal unique identifier, analysts could link information between and among files and across time, regardless of which state system the student is enrolled in. At present, one can only look at net changes from year to year: thus, the validity of information about transfer and retention is compromised. As one user

explained: "The problem is they lose them when they disappear from the . . . systems. Right now, no one can tell very clearly what happens to all those folks who disappear from one year to the next." A participant from the Department of Finance reminded the committee that the state legislature is becoming increasingly interested in retention and transfer issues.

The Users Committee quickly reached a consensus about the value of a unique identifier. Discussion then centered upon the characteristics of a specific coding system. Participants agreed that, while not a perfect choice, the Social Security Number (SSN) would be a reasonable universal identifier. Not only do most students already have a SSN, but also the Social Security Administration has available a list of numbers they never use, the 900 series, which could be assigned to students who choose not to divulge their own SSNs or who do not have numbers in the first place.

Many campuses already use SSNs. Several committee members from districts where the numbers are not used affirmed that it would be relatively easy for them to initiate the procedure. Moreover, the use of SSNs would be consistent with the dominant thrust at the CSU.

Both internal and external users expressed concern that confidentiality and individual privacy be protected if SSNs are used. Drawing upon discussions with the agency's legal counsel, Chancellor's Office staff assured the committee that the community colleges could legitimately collect SSNs, provided that policies and procedures are established to ensure against inappropriate disclosure and access.

File integration. Throughout the interviews and committee meetings, one theme prevailed: The data files within the California Community College

information system are not adequately linked with one another. A staff member from the Department of Finance illustrated one practical effect of this deficiency:

> One of the things that started our whole interest in data again was a question that was asked me when I came on this assignment: How many women are there in the EOPS program? And nobody could give any answers.

Ineffective file integration frustrated one vocational education staff member within the Chancellor's Office when he attempted to respond to an external agency's request for information:

> I had a request recently from a health agency in the Bay Area wanting to know how many students were enrolled in a certain program. They were interested in hiring students and wanted to know where the enrollments are, where the completers are. . . . I could not get a report out of Analytical Studies because they were unable to link vocational education data with other files. Moreover, the data on individual students were not available. I had to go back to the file and pull the individual college reports.

File integration is directly related to establishing common identifiers in the information system. An ASU staff member asserted that "linkages can be made. . . . If you have the identifiers, even with five separate files, you can link any data element you want with correct software." A district official stated: "The basic data system--the number of elements that will comprise this thing--is not tremendously large. If we can establish the interrelationships so we can go from one to the other, then we don't need to have the big redundant record files."

Granted that linkage is possible, linking data sets is also fraught with problems. The Differential Funding Report includes a chapter about the problems related to integrating data as they currently exist. The document

mentions a common frustration with the TOP code; this theme is echoed by a member of the Users Committee, who noted:

> The personnel department of the college may have one construct about how to define TOP code areas; the instructional people who assign instructional activities to TOP codes often operate from a completely different point of view. So when attempts are made to merge the staff and course data and then apply them to the financial report which has the same basic TOP code structure, one would find lots of instructional activities in which there were no faculty or lots of expenditures and staff with no associated activities.

Several legislative participants in the study also specified a need to link data on EOPS and handicapped students to regular student files via a common identifier. External agency and CSU spokespersons felt that fiscal data should be linked to data on students and activities.

ASU staff cautioned that, as files are streamlined, care should be taken to preserve the uniquely informative qualities of certain data elements. For example, following a lengthy discussion about integrating the data derived from forms 311 and 320, one person warned that if the Course Activity Measure (CAM) were substituted for ADA calculations in 311 and 320, student-sensitive information such as independent study classes and residence could be lost. External users also emphasized that the data should reflect the heterogeneity and diversity of the community college system rather than treating the community colleges as monolithic averages.

Information integration problems are to be expected--although not necessarily tolerated--in a system where information has traditionally been collected to serve the independent needs of individual units. As one person put it:

> What we had and what I noticed in meeting with other districts talking about their systems and supporting their planning projects is we've had a tendency in the past to develop systems to provide information to do a report. . . . Each of us has our own particular concern about reports in our own area.

Uncoordinated from the beginning, the information system will require major attention if it is to be reorganized properly.

Everyone agrees that integration problems are soluble. But the Chancellor's Office must take firm administrative action if needed changes are to take place. One college representative noted:

> The local districts are now responding to various mandates from various units of the Chancellor's Office. We have Facilities saying you have to do things this way. We've got the Fiscal people saying you've got to report data another way. We've got people from the Handicapped Special Services saying you've got to do it this way. All that information should be related. The system is basically there if we just put it together. It's not hard. But the problem is that colleges have their own systems--they will have to do a conversion. In some cases, they're not using the TOP code for the programs. They're using their own course identification elements. Somehow we have to get beyond viewing the state system as an intrusion and begin to see the advantage of a common system.

It is also generally agreed that effective integration can only come about if adequate resources are allocated to support it. One can sympathize with unit or district administrators who prefer to protect the autonomy of their data sources. "Simple reports are easier to do by hand than to ask an understaffed, underfunded group working the system to do it." "I don't--and might not--rely on other's data. I have to get apportionments out, and they have to be accurate." Primary users recognize that data definitions and interpretations, as well as collection procedures, may require extensive revision for the sake of effective integration.

The discussions reported here indicate a general trend within the CCC system toward integrating information. A variety of related efforts are under way in different parts of the system. But further coordinated efforts are necessary to attain file integration.

Quality of data. Obviously, the relationship between data quality and data use is circular: data should only be collected if they are used, but if data are not reliably collected, they cannot be used. This circularity permeated discussions about specific data elements. One purpose of this study was to examine specific data elements to identify those which are not used, and to recommend their elimination--or, in the case of those elements which are potentially useful but which suffer from ambiguous definition, to recommend revision. In some instances, users found that the two criteria crossed. Data elements such as Declared Student Major and Student Goal are not used because they are defined or coded differently from campus to campus and because neither is reported very often. Consequently, the two elements are unreliable, although potentially very useful to CPEC and the legislature. An ASU staff member remarked:

> The general feeling is that the selections in the [Student Goal] element are not good enough to capture the differences among students as to what goal they're pursuing. . . . Would we use it? Absolutely not. It's not usable, given the different definitions.

The lack of standardized reporting extends to elements in staff data files as well. Again, an ASU officer said: "There isn't a common way of reporting information on hourly, full-time/part-time. . . . It really raises a question in our minds about what we know is happening in districts and in what we see reported."

Users from external agencies requested that information be carefully edited before it is reported. CPEC officials maintained that because very little

editing is done in the Chancellor's Office, they must edit data and contact colleges directly when discrepancies appear. CCC staff dispute this assertion.

Data elements in staff files. The problems associated with staff files are different from those associated with student files. For instance, when the use of a common identifier was discussed, it was pointed out that such an identifier would be helpful in tracking part-time staff who teach in more than one district, but an ASU rpresentative voiced some misgivings: "Although the districts use their own unique identifier, the Chancellor's staff has tried to do longitudinal tracking and invariably nothing can be done. I am also concerned about the misuse of a Social Security Number identifier." It was generally agreed that the adoption of a unique staff identifier was probably a bad idea. At any rate, action should be postponed until the matter had been given further study.

The greatest concern related to staff data was that, once data are aggregated, they are interpreted differntly by local colleges and by the Chancellor's Office. The colleges claim that the aggregate figures they get back from the CCC do not reflect actual conditions. According to some committee members, the discrepancy arises because data elements are not clearly defined and are therefore open to varied interpretations. Others say that the definitions are clear but not the aggregation procedures to be used in fulfilling reporting requirements. A representative of the Chancellor's Office said:

> We went through two years of hard negotiating with a Chancellor's Advisory Committee to develop the elements--and everyone felt there would be some problems. I've never dealt with such a mess in my career. A lot of elements represent a compromise.

Another person added: "The initial list was long. . . . The battle was to get the list down, so the fine points weren't attended to."

The committee agreed that further definition of staff data elements is necessary, along with fuller discussion of the procedures to be used in aggregating data for reports. Committee members felt that a working committee should be appointed to resolve these issues.

Duplication in reporting. External users as well as representatives from local districts complained that colleges are required to report virtually the same information to different units within the Chancellor's Office. They called for a reduction in this duplication of effort: "Districts don't have a problem with reporting per se, but rather with reporting the same information under several different headings."

A CPEC representative attributed this duplication to the lack of an efficient, centralized information system within the CCC that can respond quickly and efficiently to individual unit requirements. Consequently, units and agencies take care of their information needs independently. As one person put it: "They keep the stuff that is absolutely essential to them, knowing full well that they can get it out when they need it." Thus, the independent data requests from individual CCC units create considerable duplicative reporting.

Because of the lack of data integration, data requests from a CCC unit incorporate information which is not unique to a program or unit, Thus, college officials are asked to provide data which may not be readily available to them or which may have already been provided to CCC in other forms. A frustrated EOPS representative spoke to this issue: "EOPS data elements are now about two-thirds financial aids and one-third registrar's office data. Only about two elements are unique and significant to EOPS. Why don't they report their data and we report ours?" Or, as other participants put it, why can't the data that have already been reported be used to meet these demands?

Members of the Users Committee agreed that implementing a unique identifier and other procedures to integrate files would reduce duplicate reporting. But they also clearly acknowledged that a change in attitude and behavior would be required: CCC and external users would have to trust the efficacy of a central information system, and a data collection timeline that met the needs of various users would have to be determined.

Reporting burden. The local districts feel that a tremendous overall reporting burden is imposed on them; their dissatisfaction is aggravated when they have no particular incentive to report or when they perceive no direct benefit to the colleges.

Given the immediate pressures of day-to-day work, it is easy for districts to justify assigning a low priority to reporting. As a committee member stated: "Money tightens up; there is a loss of staff, and the state reports end up being put off. There is no incentive--positive or negative--to turn them in on time." The problem is compounded when reporting is voluntary. Many districts do not, in fact, turn reports in on time. Several informants agreed that, even though enrollment data are due by January 1, it is usually takes community colleges until April to respond. Since a good statewide information system relies upon complete and valid data, lax reporting is a major concern.

In both the committee discussions and the interviews, two major views emerged. One was that the volume of required reporting is burdensome: several local officials were particularly disgruntled because they felt that the promises made in 1976 to reduce reporting requirements had not been kept. The second view was that if the Chancellor's Office gave frequent proof that the data have some practical value to the districts, reporting would be seen as less burdensome

and might be done more thoroughly and accurately, improving the system all around.

Feedback and data use. Both the Users Committee and the second-round interviewees raised three major issues related to feedback and data use: (1) the quality or usability of the reports distributed to the field; (2) the number and frequency of those reports; and (3) the adequacy of the resources available to prepare reports.

Spokespersons from the colleges, the legislature and the Department of Finance set a high priority on usable data. As one college participant put it: "You're going to have problems with data integrity if the colleges have no use for data--no matter what reports are generated." A CCC representative noted: "Part of the problem is that some data serve no local needs; it's just sent to the state for their purposes." Another college participant complained:

> All districts gather a tremendous amount of information and send it somewhere. Then two years later, we get some of it back. We feel like we're sending it into a hole. . . . It sends chills up my back to hear us talking about new data elements and files .

Thus, users agreed that the Chancellor's Office should make some effort to show how data submitted from the field would be used, either for state or local purposes, if only to prove that the information was not, in fact, "sent into a hole." In turn, an ASU spokesperson asked that field and external users suggest how feedback might most effectively be channeled: through annual reports, occasional topical papers, responses to ad hoc requests, or even notations on data-reporting forms that specify the intended uses and audiences. The committee agreed that all of these alternatives should be explored. A number of participants described their own procedures for giving feedback to users. A

college official emphasized the value of appropriate reporting efforts: "The Department of Finance told us they would be using it. That's all the field needs to know--that the data they're submitting is good and is being useful."

Chancellor's Office personnel explained that the agency has not invested many resources in report production. The several summary Profile publications are a response to this need, but they are not enough. "The budget is indeed inadequate for data use and report publication. . . . resources are possibly one answer, but output has to be a priority with the Chancellor's Office."

Outcomes data. On one point there was almost unanimous agreement: The CCC information system uses too few outcome measures. Spokespersons from the legislature, the Department of Finance, and CPEC all agreed with a Chancellor's Office staff member: "We need information about what students are getting out of their stay in community colleges." Several measures were suggested in discussions: courses and degree completion rates, grades, retention and transfer rates. The Department of Finance is particularly interested in transfer rates (and thus regards the new Transfer Education Centers as a promising development.) One person maintained that the system already collects sufficient outcomes information, but ASU staff disagreed: "Some data that are not collected include units completed, grades, transfer, or program completion." An examination of available data elements seems to indicate a paucity of outcome measures.

It was noted that timing is very important. Many of the current data collection procedures occur at the beginning of the term. Thus, collecting outcome information could require a separate file or report at term or year end, thereby adding to costs.

Several participants spoke of the need to consider the political implications of defining specific outcomes as indicators of overall CCC "success." For instance, a student may enter the community college with one goal in mind but may, for a variety of reasons, change goals during the first two years. Obviously, outcome measures should bear some relationship to student goals. But should the student's initial or revised goal be taken into account? Has the community college failed the student if that student does not achieve his or her initial goal? Might not a change of goal count as a community college "success" (e.g., if a student entered intending to get no more than a certificate in a vocational program but then decided to transfer to a four-year institution and go for the baccalaureate)? Thus, the measurement issue is complex. The outcomes issue cannot be deferred, however, because of measurement difficulties. As one committee member said:

> I appreciate the concern about making too narrow an issue of what outcome measures should be. However, the public perception of community colleges is already creating a problem in that we don't have a way to prove we're successful.

Adequate resources. Resources, both at the local level and in the Chancellor's Office, were considered a key factor in getting the integrated information system going. Some Committee members went so far as to say that, without adding funding and staff, any attempt to improve the system would be futile. Discussion of resources centered on questions of the actual costs incurred in collecting data, the differential costs of collecting specific types of data elements, the cost of staff and student time, the differential costs of examining various levels of information, and the cost-benefit relationship of information provided to users.

At present, the Department of Finance is reluctant to commit additional resources at the local level "because they do not know enough about how reporting requirements will change, how they will be consolidated." But both the Chancellor's Office and local district representatives urge commitment of additional resources. An ASU staff member conceded that "we have not invested scarce resources in output of data," output which might have alleviated some of the concerns expressed by the Department of Finance. A college representative, however, claimed that without additional funds, they would not be able to support any additional workload required by changes in the information system.

General management. The Users Committee discussed at length the need for new administrative mechanisms to manage information integration. External agency users said that, in order to centralize the information functions now conducted in different parts of the Chancellor's Office, a separate unit should be established for system design, data collection, and data editing. They maintained that these functions should be distinct from those of the ASU, which should use the edited data for published reports.

Although there was no clear consensus on a specific management pattern, the Committee was unanimous about the necessity of having an organizational entity within CCC that is specifically charged with data integration responsibilities. Moreover, Committee members felt strongly that these responsibilities would not be discharged well unless the entity had clear administrative authority. Participants frequently said that the administrative head of this effort should be an "information czar."

Some members of the Users Committee had strong reservations about using the existing organizational structure of the Chancellor's Office and empowering

one of the existing unit heads as "information czar." In such a situation, traditional suspicions and lines of authority are not likely to change. Some participants suggested a different organization:

> The Chancellor should establish an agency-wide, inter-unit committee with people in authority to make decisions. The chair of this group in the Chancellor's Office should have the authority to resolve differences.

While suggesting other organizational alternatives, committee members emphasized the importance of centralization: "Someone has to pull these groups together, and it could be done through association executives or presidents to determine what each is collecting in their areas." Another person recognized the diversity of views and the administrative efforts necessary to attain agreement:

> [Integration] really requires working groups in specific subject matter areas. . . . There really needs to be a crossfunctional look at all of these activities. . . . There needs to be a policy within the Chancellor's Office which forces people to coordinate these functions.

User Requests: Additional Data Needs

Interviews with personnel from ASU, from other units of the Chancellor's Office, and from the Information Office indicated that CCC units receive several types of requests for information that cannot be fulfilled by existing data. It should be noted that these interviews were informal and that the subjects interviewed do not constitute a scientific sample. Therefore, the results should not be taken as firm directives to add specific new elements to the data files. Nonetheless, the issues raised in the interviews seem to reflect typical concerns.

According to informants, unresolved requests come from a variety of sources: the legislature, the press, the general public, government agencies,

units within the CCC, and such external agencies as the Air Resources Board, the Peace Corps, the Department of Commerce, the Department of Finance and the legislature.

Requests which cannot currently be met fall into several general categories (see Appendix D). For instance, legislative staff members ask questions about student retention and dropout rates and student contact hours; to answer their questions, contact hours would have to be related to full-time and part-time faculty, to programs and disciplines, and to noncredit instructional areas. They also want to find out what proportion of vocational education students complete programs or transfer.

The media and the general public want to know about student outcomes and about student demographics in given occupational areas. Their unmet requests concern such outcomes as numbers of degrees and certificates awarded and proportion of students graduating. They also wanted some indication of success in vocational education by type of training.

Other government agencies and units within the CCC system are primarily interested in the relationship between student demographic characteristics (especially race/ethnicity, gender, age, and disability status) and participation in various academic and vocational programs.

Some questions certainly cannot be answered from the current data base. For example, topics ranging from student outcomes to the involvement of business in vocational education planning cannot be addressed using data elements which the CCC collects. In other cases, any answers available from the data are unreliable because of incomplete reporting. But many questions--especially those dealing with student demographics and academic programs--

could be answered if a unique student identification code were available to link data files which already exist.

Earlier Studies and Current Activities

A number of earlier studies and current activities are relevant to the development of an integrated data system in the Chancellor's Office of the California Community Colleges. These include research, policy, and analytic studies conducted by the Chancellor's Office, as well as studies specifically directed toward examining data elements and promoting better data integration. In addition, currently under discussion are a number of specially funded projects or activities which have implications for data integration.

The need to improve data systems throughout the Chancellor's Office of the California Community Colleges has been generally recognized, and various attempts have been made to develop recommendations for such improvements. Extensive revisions of the student files were proposed to the Board of Governors in September, 1982. These revisions were based, in part, on a prior study conducted for CCC-EOPS, Evaluating EOPS: A User Oriented Approach (Alkin and Stecher, 1981). In particular, the report to the Board of Governors recommended the addition of outcome measures to the student census data and the addition of new files for HSPS (now implemented) and Financial Aid.

More recently, the FIPSE project started out with the intention of delineating more clearly between the functions of the California Community Colleges and those of the Accrediting Commission. It "was developed on the premise that community college evaluation and planning can be improved substantially by defending and coordinating the complementary though separate

roles played by the state agencies and the regional accrediting commission." Moreover, as a consequence of the FIPSE effort, the need for improved outcome measures has been increasingly acknowledged. Thus, the project has been preparing a handbook of outcome measures, intended primarily for use by local community colleges but potentially useful at the state level as well. Any discussion of potential outcomes to be included in an integrated information system should take this effort into consideration.

The comprehensive planning process is another activity which is closely related to the FIPSE project. As part of a pilot study, seven community college districts are currently implementing a strategy for developing and testing new planning procedures. the comprehensive planning document, now in preparation, is designed to supplant a number of existing state-level review and approval activities. The assumption is that, if various aspects of the current planning process are incorporated into a single document, duplication of planning and evaluation efforts at the community college level will be reduced, state-level policymaking will be improved, and CCC unit efforts related to the review and appoval process will be streamlined. The prototype plans are scheduled for review in September. It is anticipated that an October, 1985 status report of the project will recommend a standard format for planning documents. If so, it is important that these efforts be fully coordinated with efforts to develop an integrated data system.

The earlier research and analytic studies suggest the range of potential data needs and illustrate the limitations of the existing data systems. For instance, Planning and Future-Study analyzes trends that may affect the future of California's community colleges. Not only does the study have implications

for the current data system, but--more important--it shows that forecasting trends would require a much more sophisticated data system than is currently available or envisioned.

Focusing on the need to develop more accurate cost data for funding community colleges, the Differential Costs Study proposes that funding be based upon four cost "centers": instruction, instructional support, plant maintenance, and administration. The use of appropriate workload measures for each of these centers must be determined; consequently, accurate data related to these areas are needed. The analysis of available data within the current information system proved discouraging. As the authors noted:

> However, since these data were the best source of information available regarding instructional and support activities and associated costs (expenditures), efforts were made to combine and integrate data from the various reports to identify cost difference and reasons for cost differences among activities. Integrating the data seems to be a difficult task. As the preliminary analysis was being completed, the project staff found a number of inconsistencies within the different reports which were difficult to reconcile. (A Plan for Implementing a Differential Cost System, 1984, p. 4-1)

Meanwhile, demands for data, as well as the number of potentially related data sets, continue to expand. The recent creation of Transfer Education Centers offers new opportunities as well as posing some difficulties for further data integration. Students will benefit from the availability of a microcomputer system that provides counseling and guiding and that helps them to understand their potential transfer status relative to either CSU or UC. Similarly, the initiation of a statewide Computer Job Bank, to which the individual community colleges have access could prove to be of great value not only in job placement but also as a market-sensitive mechanism to aid in planning college programs. If

community colleges are to have access to a statewide system, perhaps transfer education should be included on the same system. If that is the case, and if community colleges are networking through that system, it might make sense to start collecting transfer and outcome data through the system as a part of its operational use. Likewise, the matriculation project and proposed state funding for this activity may have implications for a revised data system.

Three other activities deserve mention for their possible relevance to the development of an integrated data system. First, the results of Peat, Marwick, and Mitchell's study of office automation, though not yet reported, will probably have implications for coordinating data on the individual CCC office computer systems. Second, a study is currently under way, with funding from the Vocational Education Unit of CCC, to examine specific information needs related to vocational education. Third, several of the units within the Chancellor's Office--most notably HSP&S--have established working committees to examine data elements and identify data needs. While these activities are important, they should be subject to some kind of central coordination in order to maximize data integration.

CHAPTER III

RECOMMENDATIONS

This study makes it clear that the primary users of California Community College information believe CCC data to be of variable quality and minimally utilized. They also believe that if these data were better integrated and if the information system were centrally managed, quality and use would increase. This chapter recommends strategies for determining specific changes in data elements and for facilitating the implementation of an integrated information system. These recommended strategies are closely linked and should be considered as a whole, since one process often establishes the conditions for others.

> **Recommendation 1:** Establish an agencywide mechanism or authority to manage an integrated information system and to be responsible for administering efforts to modify the system, determining timelines for reports, establishing data validation procedures, developing data file linkage capabilities, providing in-service training, and so forth.

Throughout the course of this study, one theme emerged: the need for a genuinely integrated and centralized information system.

At present, several units within the CCC collect information, using a variety of procedures. The individual colleges are bombarded with what they perceive to be redundant requests for information. Thus, practitioners at these colleges ask that existing data be better integrated, pointing out that the information they now provide should be adequate for whatever purposes the Chancellor's Office might have. For their part, the CCC units emphasize their

need for unique data to carry out their specific responsibilities. The Fiscal Unit, for example, requires certain data to fulfill its legal obligations with respect to the apportionment of state funds, even though some of these data may overlap substantially with data collected by other units in the Chancellor's Office. Again and again, spokespersons for these units told us that, unless they could be assured that the data collected under a centralized system would be of adequate quality and timeliness, they would not consider changing current data collection procedures.

To summarize: Much of the information currently collected by various CCC units to fulfill their particular responsibilities might be efficiently integrated. But no unit has sufficient authority to modify the system in order to improve integration.

This lack of hegemony is illustrated by the absence of communication or coordination among several recent studies and activities, all of which were carried out under the auspices of the Chancellor's Office and all of which could have a profound impact upon data collection. For example, the Differential Funding Study has significant implications for data collection, present and future; the Peat, Marwick and Mitchell study discusses the lack of centralized data collection authority and makes suggestions for improvement; the FIPSE study explores potential outcome measures that might be included within an integrated information system; the Comprehensive Planning Project examines the ways in which different data collection and planning activities into a single planning document; the Vocational Education Unit is currently conducting a study of data management within that unit; the recently established Transfer Education Centers and the Statewide Job Bank are imposing new data collection

requirements and reconsidering former requirements; the CCC's Specially Funded Programs has conceptualized and, in some cases, initiated data collection related to information needs stimulated by Chacon Bill legislative requirements. In addition, a number of different task forces and committees are currently reviewing specific data needs (e.g., Financial Aids Task Group, Handicapped Data Task Group, Committee on New Hires, Separations and Promotions.) In short, within the Chancellor's Office, a number of related studies and activities have been undertaken, each addressing the issue of planning for data collection in its own way. But because of the lack of a centralized authority, these activities may be operating at cross purposes.

Clearly, an agencywide organizational unit which has the authority to manage and to be responsible for an integrated information system is needed. This role might be assigned to an existing unit within the Chancellor's Office (e.g., the Analytic Studies Unit), or a new unit might be established. Each alternative has advantages and disadvantages. Given its long experience with data collection and analysis, and its record in handling a variety of data bases, the ASU might well be able to perform the required integrating function, if it were given appropriate administrative authority and resources.

On the other hand, some interviewees maintain that a separate data collection and integration unit should be established. One rationale expressed by those interviewed indicated a reluctance to have one unit responsible for data collection, editing and analysis. It was suggested that the collection and editing be separated from analysis. Another argument suggests that since existing units have a long tradition of operating independently in collecting data, it would be difficult for one of these units to establish the authority needed to override the

potential objections of other units in the current organizational structure. According to this point of view, then, the Chancellor's should establish a separate unit, free of prior organizational identities and patterns of interaction. Under such a structure, the ASU would continue to conduct research and to produce analytical reports. Relieved of the pressure to collect and edit large masses of data, it could spend more of its resources on data analysis and reporting.

Whatever the organizational identity of the unit given authority for developing an integrated information system it would have to be responsible for certain activities: administering efforts to modify the information system (see Recommendations 3-5); centralizing and streamlining data reporting requirements; determining timelines for data reporting; establishing procedures for data collection and subsequent data validation; developing data file linkage capabilities; and providing appropriate in-service training not only for practitioners in the field but also for personnel in those units within the Chancellor's Office that would be directly affected by changes. This partial list of activities can only suggest the range of responsibilities that such a unit might have.

To reiterate: Specification of the tasks to be accomplished and identification of the unit to be responsible for accomplishing them are important. But there is an even more critical requirement for success. Very strong actions must be taken at the Chancellor's level to make this effort a priority and to designate a unit which will take charge of developing an integrated information system and which will have the authority necessary to overcome extant practices, suspicions, and vested interests within the Chancellor's Office.

The participants in this study agreed that improved information integration requires the visible and unequivocal commitment of resources. Community college representatives, as well as individuals from other government agencies, emphasized that, even with central authority, an understaffed and overburdened agency will not be able to manage information adequately.

Recommendation 2: Establish mechanisms for reviewing all changes in the data system.

a. Establish a mechanism at the Chancellor level for reviewing progress and overall charges.

b. Initiate ad hoc committees, representing appropriate constituencies, to provide comments and suggestions on specific recommended changes.

Various organizational entities, both in the field and within the Chancellor's Office, have a stake in developing an integrated information system, and some of them have appointed working committees to study the issue and to make recommendations. Given the diversity of interests, conflicts may arise. Changes that seem feasible and appropriate to one group may be regarded as inadequate or ill-advised by another. Such conflicts could lead to an impasse. While a strong central authority (such as that proposed in Recommendation 1) should be able to resolve these difficulties, a back-up mechanism would help in this process.

Therefore, we propose that the Chancellor establish procedures for ensuring broad review of the progress made in effecting data system changes. Such a review mechanism might take a number of forms: an administrator with a special reporting relationship to the Chancellor, an external consultant-reviewer, or a specially appointed advisory committee. If the last, care should be taken to insure that committee members have the necessary influence and authority to

carry weight with all potential users of the integrated information system. For this reason, we would recommend that, if the mechanism is a review committee, its members be appointed directly by the Chancellor.

Many groups have a stake in the CCC information system and would be directly affected by any changes in that system: various units of the Chancellor's Office, external agencies, the community colleges themselves. If the new integrated system is to be successful, all these parties must participate in considering the changes to be made.

To insure their participation, the data integration unit might establish working committees to examine specific issues or substantive recommendations and to comment on how changes can be implemented without creating new problems. Each of these working committees should be composed of members with the expertise deemed necessary to explore the particular issue assigned to the committee.

The working committees already established within the Chancellor's Office--now discussing changes which would affect individual units--might be relied upon to examine certain unit-specific issues. But such an approach has its limitations: Modifying information requirements unit by unit is likely to result in duplication of effort or even in further complication of an already complicated data base. What is needed is a broader perspective, one which not only reflects diverse interests but also aims at reaching consensus across units, one which takes into account the effects of proposed changes on the system as a whole. Thus, the current unit-oriented working committees should be used only as their efforts fit into the total data integration effort.

Recommendation 3: Develop and implement a system of unique identifiers (Social Security Numbers) for students, with appropriate procedures to protect privacy.

The lack of a mechanism to link data lies at the heart of many of the limitations in the existing information system. Oftentimes, seemingly simple questions cannot be answered because data sets collected by different CCC units cannot be linked. Indeed, in the course of our investigation, we found that fully half of the unmet requests from external agencies (see Appendix D) could be met if existing data sets were linked.

The most effective means of linking data is by using an individual identification code for each student. After discussing this issue at length, the Users Committee endorsed the notion of adding a unique student identifier to the data collection system. The information contained in one student file could be used for many purposes, thereby reducing redundant data collection.

We recommend that any such identifier remain the same throughout the student's college career to facilitate longitudinal tracking of individual students. We further recommend that the same coding scheme be used throughout the CCC system. While each college or district might develop its own scheme for assigning unique student identifiers, such a procedure has major deficiencies. It would restrict the system's ability to track the progress of individual students as they move among community colleges or transfer from community colleges to some other higher education systems.

The California State Universities are already using Social Security Numbers (SSN's) as unique identifiers. The University of California, on the other hand, is using unique identifiers generated at each campus. If the California Community Colleges were to adopt SSN's it would enable better followup with the CSU and within community colleges.

The use of SSN's must be accompanied by appropriate safeguards to ensure confidentiality of student data. The Buckley amendment stipulates that the use of the SSN as an identifier for such purposes as collecting higher education data is not an invasion of privacy.

Certain problems requiring statewide prescriptions to assure consistency may arise. For instance, there must be some uniform procedure for assigning an alternate unique identifier to students who do not have SSN's. The CSU system has demonstrated that this is technically feasible, but broad consultation with colleges and districts will be required to reach agreement about what procedure should be implemented.

Students who refuse to provide their SSN's constitute a much more complex problem. The participants in our study voiced a range of views on this issue. Some maintained that students have the right to refuse to provide information: if they choose to exercise that right, they could be assigned an alternate identifier. Others felt that students who refuse to provide complete information should be denied state funds. At any rate, these matters will have to be resolved through a process in which appropriate constituents participate.

Recommendation 4: Modify student, staff, and facilities data elements on the basis of their current and potential utility.

a. Delete the following data elements which are not used: the student data elements Veteran's Aid Status and VEA Funding for Disadvantaged Students, the staff data elements Additional Time Required on Campus, Required Office Hours, and Categorical/Contracted Assignment.

b. Standardize reporting the following data elements: Student Declared Major and Student Goal.

c. Require reporting of the data element Student Goal.

d. Examine elements in the staff data file to reach agreement on common definitions and aggregation procedures.

e. Examine elements in the facilities data files to determine which are not widely used.

f. Identify overlapping or duplicate elements created as a result of introducing a unique identifier and establish an administrative procedure to determine which elements to eliminate.

Throughout this study, we have been guided by the principle that data collection is valuable only if the derived information is useful and is in fact used. We do not believe it appropriate to develop massive data bases which represent all the information that anyone might want to know. The criterion for including new data files or elements should be their anticipated use.

With the criterion of utility in mind, we examined the data sets currently collected by various units within the Chancellor's Office. As noted earlier, this inquiry was restricted to those data sets which were available in computer files either at the Teale data center or on office microcomputer systems. The first phase of the inquiry focused on identifying these data sets (see Tables A-1, A-2, and A-3). In the second phase, their utility--actual or potential--was analyzed (see Tables B-1 and B-2).

This analysis indicated that data elements go unused for a variety of reasons. First, some that were once required for reporting functions are no longer pertinent (e.g., Veterans' Aid Status); the information they give is of no, or only limited, value. Second, some elements are optional rather than required (e.g., Additional Time Required on Campus, Required Office Hours, and Student Goal); because many districts choose not to report such data items, the data are so incomplete as to be virtually useless. Third, some data elements are not

recorded in a standardized way (e.g., Student Declared Major and Categorical/Contracted Assignment); because colleges are allowed to use locally derived codes in reporting such information, the resulting data are not comparable across the community college system and thus have limited usefulness.

Any modification made in a given data element should depend on its potential, as well as its current, utility. On this basis, the matrix of data needs developed in this study clearly indicates that the student data elements Veterans' Aid Status and VEA Funding for Disadvantaged Students be eliminated. Not included on this list is the data element Student-Declared Major, which was reported to be of broad interest to both CPEC and the state legislature and which would probably be utilized if the information were reported in a standardized way. Similarly, the element Student Goal, which is currently optional, should be required rather than optional, because CPEC and the state legislature view this information as highly desirable.

The data matrix also indicates that several student data elements bear re-examination. Although some of these elements may prove to be of value, there was disagreement among the informants about their immediate utility. These include Student Level, Weekly Student Contact Hours, and SAM Completion Status. Some of these elements may simply require revision, while others may prove to be expendable altogether.

Although the interviews revealed no use of the data element High School Education, subsequent feedback to this document indicated that it is valuable as an indicator of student input to the community colleges. Furthermore, the element High School of Graduation is apparently used by CPEC. Since this

information is collected only for those first-time students who enroll full time, however, it constitutes partial data. Thus, any use of this element distorts the true picture. If this element is to be used, the information should be collected for all students, including part-timers and re-enrollees.

The following staff data elements were found to be of little or no use and might be eliminated: Additional Time Required on Campus and Required Office Hours. The element Categorical/Contracted Assignment was not reported for 1984-85 pending revision. The data matrix revealed mixed reactions to the utility of Funding Source in the staff data files, so this element should be re-examined. Although the elements Weekly Hours and Year of Birth are not currently used, respondents anticipated that the information would be of use in the near future and should be retained. The most significant finding concerning staff data files, however, was not that single data elements are not being used, but that elements are not defined consistently from site to site and, more important, that there is considerable ambiguity and disagreement about the data aggregation procedures used for reporting purposes.

One of the ad hoc committees (see Recommendation 2) appointed to assist in the development of the integrated system should give attention to the definition and wording of specific staff data elements. Personnel directors should participate on a working committee which considers redefining these elements. As better linkage between data sets are created and duplication reduced, other changes in definition also may be required.

A related issue to be considered by this working committee is the interpretation of data elements. Practitioners in the field complain not so much about the way data elements are defined as about the way they are aggregated

into totals for reports. Clearly, consensus on how to aggregate staff data must be reached, and a working committee might be formed to consider this issue.

Some of the data elements collected by the Facilities Unit seem to have limited current utility (see Table B-1). The survey of data uses indicated that the Building Inventory Summary and the Discipline List-Sequenced Room Use, two reports based upon data elements in the facilities file, are rarely used by external agencies. In addition, the Room Use Summary and the Room List - Room Use reports are used only for specific studies related to off-campus centers and new campuses. It is recommended, therefore, that the Data Integration Unit head, in association with personnel from the Facilities Unit, re-examine the reports as well as the data from which they are derived, assess their ultimate usefulness, and decide which specific elements to delete or to modify.

Establishing a unique student identifier (see Recommendation 3) has the potential for reducing duplicate reporting and overlapping data elements. At present, because data sets cannot be linked, the same item of information may be requested on a number of different forms. If unique student identifiers were introduced into the system, much of this duplication could be eliminated. For instance, Forms 311 and 320, which ask for many of the same information items, might be integrated. However, it is anticipated that a final decision about which elements to eliminate will be difficult to reach. Administrative units have exercised significant autonomy in the past over what data will be collected and how it will be interpreted. And units will, no doubt, continue to maintain that they must collect certain data for reasons of timeliness, ease of access, and so forth. A procedure must be established to review duplicate elements, and a

central administrative mechanism which embodies final authority must decide upon the ultimate fate of duplicate elements.

Recommendation 5. Expand the outcome measures in the integrated information system.

a. Include in the student data file of USRS the following additional elements: Units Completed, GPA for Year, Cumulative GPA, Degrees (AA) awarded, and Certificates Awarded.

b. Consider an expanded range of appropriate outcome measures and special surveys.

Much of the discussion, both in the interviews and in the meetings of the Users Committee, centered on the need to include outcome measures in the CCC information system. For instance, many participants suggested that associate degree completion rates would constitute valuable outcome data. Others emphasized the need for information on transfer rates (data that would be more easily accessible if a unique identifier were introduced into the system). Still others insisted that appropriate outcome measures should reflect the full range of community college functions; they would include measures of vocational education program retention and completion. And an idealistic few maintained that all outcome measures should be related to individual student goals, though any attempt at such a linkage would be fraught with measurement difficulties.

We recognize the validity of the concern that a full range of meaningful student outcomes be considered: Skills, knowledge, attitudes, long-term educational attainment, and so forth. Nonetheless, the introduction of outcome measures is an incremental process. There is, in fact, consensus about some of the outcome measures appropriate for inclusion in the system at this time. Units Completed, GPA for the Year, and Cumulative GPA are already part of the

EOPS student data file; we recommend that these elements be deleted from that file and be added to the USRS general student file. AA Degrees Awarded and Certificates Awarded are other potential data elements about which there is little controversy. They too should be included in the integrated information system.

An expanded range of additional outcome measures should be considered for inclusion in the system. Appropriate measures of transfer and transition, as well as indices of retention, must be derived. Some of these indicators can probably be readily determined from aggregated data within a revised system; others may require the creation of new elements. In some instances, outcome data needs might be best satisfied by surveying students or graduates every two or three years. In any event, it is felt that additional outcome measures must be determined and reviewed to assure that they meet the needs of potential information users and at the same time satisfy those within the community college movement who are concerned that the range of community college activities are appropriately represented.

> **Recommendation 6:** Develop procedures to increase the use of information contained within the data base and to demonstrate the relevance of the information to the colleges which provide it.

Obviously, information should be collected so that it can be used, and most of the primary users of CCC information agree about the desired general purposes for which data are collected. They are to be used by the Chancellor's Office for administrative purposes, in planning and programming. They are to be used to explain and justify the community college enterprise to legislative and executive decisionmakers. Finally, they are to be used to encourage the colleges themselves to improve their operations.

But these purposes are not always attained, even when the purposes are not always clear to the major providers of information, who often have only a vague understanding of how the data they submit will be interpreted and used. They typically accept the fact that the data have to be reported, so they continue, often grudgingly, to provide them. In collecting data, the Analytical Studies Unit has had to depend upon moral suasion, and the good will of the colleges. If data providers are not convinced that the overall endeavor has value, they may use the most expedient means, rather than the most thorough and accurate, to comply with state requirements. When local providers assign a low priority to collecting CCC data, their returns may be delinquent and the data of low quality.

The effectiveness of information use is not always visible. As they go through the effort of amassing the required data, practitioners wonder whether the CCC has been successful with the legislature, or whether additional reports to external agencies have been completed. Conversely, the Chancellor's Office staff wonders whether information provided has helped colleges to understand and improve their own operations. In short, CCC and college staff have no way of knowing whether their efforts have any payoff.

Therefore, information use must become more visible. Convinced that they are engaged in a worthwhile activity, those people responsible for collecting data at the local level may devote greater attention to their quality. Higher-quality data could well lead to more extensive use of these data, both within the CCC and by external agencies.

The CCC must demonstrate unequivocally to colleges that these data are, in fact, necessary, appropriate, and useful. Perhaps each information request

and each report should include a note indicating the intended use and the intended audience for the data (e.g., the types of reports to be prepared, the external agencies making requests). Another way to demonstrate relevance is to produce annual summaries indicating what information needs have been met by the CCC; these summaries could specify the data files or elements used for each product. A document such as this research report, which details the uses of data elements, certainly represents a step in the direction of bolstering confidence in the importance of the data system.

Not all of the problems with information utility are the result of mistaken or vague perceptions. As was noted in most of the interviews and Users Committee discussions, some real underutilization occurs throughout the system and cannot be dismissed. Much of the information collected by the Chancellor's Office is not reported back to colleges even in simple descriptive summaries. Indeed, many of the data files are not analyzed or reported at all. These analysis and reporting activities have substantial potential value both to the colleges and to external agencies.

It is not that units within the CCC are unwilling to report data but rather that they face severe financial problems in preparing even routine reports. And, data reporting has not been a high office priority. Sufficient resources must be provided for reporting activities. To engage in massive data collection without adequate resource allocation for dissemination is indeed wasteful--and futile.

Many general information requests from external agencies can be met through routine analysis of existing sets of data. But the CCC also gets many requests for special-purpose information (see Appendix Table D). Therefore, the

agency should establish a policy of coordinating all external information requests through a newly created information integration unit, which will be in the best possible position to know what data sources are available. The current practice of channeling requests to a variety of units threatens to diminish the image of the CCC, especially in situations where the requests sent to a unit cannot be fulfilled because that unit is not aware that the data are available in another unit.

Table A-1

EXISTING DATA SETS:
AVAILABLE AT TEALE DATA CENTER

Data Files/Data Element	Administrative Location of Data	Data Source
1. STUDENT DATA		
First Census Enrollment		
Birthdate	Analytical Studies Unit (ASU)	USRS 1/
Citizenship Code	ASU	USRS
College of Last Attendance	ASU	USRS
Enrollment Status	ASU	USRS
High School Education	ASU	USRS
High School Graduation or Last Attendance	ASU	USRS
Positive Attendance Enrollment	ASU	USRS
Racial/Ethnic Code	ASU	USRS
Residence Code	ASU	USRS
Sex	ASU	USRS
Student-Declared Major	ASU	USRS
Student Goal	ASU	USRS
Student Level	ASU	USRS
Total Potential Hours of Attendance (TPHA) - Positive Attendance Courses	ASU	USRS
Units Attempted	ASU	USRS
Veteran's Aid Status	ASU	USRS

1/ Uniform Statewide Reporting System

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Weekly Student Contact Hours (WSCH) - Full - Term Credit Courses	Analytical Studies Unit (ASU)	USRS
Vocational Student Enrollment		
Cooperative Education Status	ASU	USRS
Consumer Homemaking Education Program Code	ASU	USRS
Instructional Setting, Academically Disadvantaged Student	ASU	USRS
Instructional Setting, Economically Disadvantaged Student	ASU	USRS
Instructional Setting, Handicapped Student	ASU	USRS
SAM Completion Status	ASU	USRS
SAM Student Major	ASU	USRS
SAM Vocational Program Code	ASU	USRS
VEA Funding for Dis advantaged Student	ASU	USRS
EOP&S Student Data		
Academic Standing, Beginning	ASU/EOPS	USRS
Academic Standing, End	ASU/EOPS	USRS
Cal Grant B	ASU/EOPS	USRS
Counseling Hours	ASU/EOPS	USRS
Cumulative GPA	ASU/EOPS	USRS
EOPS Grant	ASU/EOPS	USRS

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
EOPS Status	Analytical Studies /EOPS	USRS
EOPS Work-Study Money Earned	ASU/EOPS	USRS
GPA For Academic Year	ASU/EOPS	USRS
National Direct Student Loan	ASU/EOPS	USRS
Non-EDPS Work-Study Money Earned	ASU/EOPS	USRS
Other Financial Aid	ASU/EOPS	USRS
Pell Grant	ASU/EOPS	USRS
Pell Grant Eligibility Status	ASU/EOPS	USRS
Scholarship	ASU/EOPS	USRS
Supplemental Educational Opportunity Grant (SEOG)	ASU/EOPS	USRS
Total Financial Need	ASU/EOPS	USRS
Total Work-Study Hours Worked	ASU/EOPS	USRS
Tutorial Hours	ASU/EOPS	USRS
Units Completed	ASU/EOPS	USRS
HSP&S Student Data		
Age of Onset, Earliest Disability	Analytical Studies / HSPS	USRS
Department of Rehabilitation Client	ASU/ HSPS	USRS
Disability and Service	ASU/HSPS	USRS
Financial Aid Status	ASU/ HSPS	USRS

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Handicapped Student Programs and Services Status	Analytical Studies / HSPS	USRS
Instructional Setting	ASU/HSPS	USRS
Off Campus Special Instructional Setting	ASU/HSPS	USRS
Services Requested or Used	ASU/HSPS	USRS
Units Completed	ASU/HSPS	USRS
2. STAFF DATA		
Actual Annual Salary for Preceding Year	ASU	USRS
Additional Time Required on Campus	ASU	USRS
Annual Salary	ASU	USRS
Annual Stipend	ASU	USRS
Assignment Full-Time Equivalent (FTE)	ASU	USRS
Average Hourly Equivalent Compensation	ASU	USRS
Average Hourly Equivalent Compensation - Certificated Assignment for Classified Employee	ASU	USRS
Average Hourly Overload Compensation	ASU	USRS
EEO-6 Occupational Activity	ASU	USRS
Employee Code	ASU	USRS
Employment Classification	ASU	USRS
Employment Status	ASU	USRS
Funding Source	ASU	USRS

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Months of Employment	Analytical Studies	USRS
Racial/Ethnic Background	ASU	USRS
Required Office Hours	ASU	USRS
Sex	ASU	USRS
TOP or CSS Code	ASU	USRS
Type Assignment	ASU	USRS
Categorical/Contracted Assignment	ASU	USRS
Weekly Hours	ASU	USRS
Year of Birth	ASU	USRS
3. COURSE DATA		
Course Activity Measures		
Active Enrollment - First Census	ASU	USRS
Active Enrollment - Second Census	ASU	USRS
Course Identifier	ASU	USRS
Credit/Noncredit	ASU	USRS
Day/Evening Class Code	ASU	USRS
Method of Instruction	ASU	USRS
SAM Priority Code	ASU	USRS
Section Date - Beginning	ASU	USRS
Section Date - Ending	ASU	USRS
Section Enrollment Accounting Method	ASU	USRS
Section Identifier	ASU	USRS

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Section Meeting Days	Analytical Studies	USRS
Section Meeting Facility - Building	ASU	USRS
Section Meeting Facility - Room	ASU	USRS
Section Meeting Time - Beginning	ASU	USRS
Section Meeting Time - Ending	ASU	USRS
Total Section Contact Hours	ASU	USRS
Total Student Contact Hours	ASU	USRS
Units of Credit	ASU	USRS
Course Classification Code	ASU	USRS
Course Transfer Code	ASU	USRS
Course Repeatability Code	ASU	USRS
Course Inventory	Analytical Studies/ Program Evaluation and Approval	Existing File Updated
Noncredit Inventory		
Application Data	ASU/Program Evaluation	Program Approval Application
Course Title	ASU/Program Evaluation	Prog. Appr. Application
Units	ASU/Program Evaluation	Prog. Appr. Application
Certification Code	ASU/Program Evaluation	Prog. Appr. Application
RAVEC Certification	ASU/Program Evaluation	Prog. Appr. Application

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Type Noncredit Course	Analytical Studies/ Program Evaluation and Approval	Program Approval Application
Minimum Sessions	ASU/Program Evaluation	Prog. Appr. Application
Special Program Code	ASU/Program Evaluation	Prog. Appr. Application
Course Activity Code	ASU/Program Evaluation	Prog. Appr. Application
Classroom Hours	ASU/Program Evaluation	Prog. Appr. Application
Primary Method of Course Evaluation	ASU/Program Evaluation	Prog. Appr. Application
Teaching Materials	ASU/Program Evaluation	Prog. Appr. Application
Method of Instruction (10 Occurrences)	ASU/Program Evaluation	Prog. Appr. Application
Demonstration of Need	ASU/Program Evaluation	Prog. Appr. Application
Course Objectives	ASU/Program Evaluation	Prog. Appr. Application
Program Inventory		
Units Required for Certificate	ASU/Program Evaluation	Prog. Appr. Application
Degree Type	ASU/Program Evaluation	Prog. Appr. Application
Year Approved	ASU/Program Evaluation	Prog. Appr. Application
Year Operational	ASU/Program Evaluation	Prog. Appr. Application
Year Deleted	ASU/Program Evaluation	Prog. Appr. Application

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Local Program Title	Analytical Studies/ Program Evaluation and Approval	Program Approval Application
Conjoint Program	ASU/Program Evaluation	Prog. Appr. Application
Noncredit Program	ASU/Program Evaluation	Prog. Appr. Application
4. FACILITIES DATA		
Preliminary Plan Package	Facilities	CCPP
(nature of project, justification, priority, budget, equipment)		
Space Inventory	Facilities	SI-1 SI-2 SI-3
(room and building use, condition of facilities, assignable square feet, ownership, location, age)		
5. FISCAL DATA		
Apportionment Data		
Student Attendance Report	Fiscal	CCFS 320
Correction to 320 Form	Fiscal	CCFS 317
Local Property Tax Revenue Data	Fiscal	CCFS 329
Flexible Calendar Adjustment	Fiscal	CCFS 320F
Apprenticeship Hour Report	Fiscal	CCFS 321
Income and Expenditure Data		
Annual Financial and Budget Report	Fiscal	CCFS 311

Table A-1
Continued

Data Files/Data Element	Administrative Location of Data	Data Source
Expenditure by Activity		
Annual Financial and Budget Report: Expenditures by Activity	Fiscal	CCFS 311
6. GLOBAL DATA		
College Code	Analytical Studies	USRS
District Code	ASU	USRS
Student Record Number	ASU	USRS
Report Period	ASU	USRS
Taxonomy of Programs	ASU	USRS

Table A-2

USRS DERIVED DATA FILES*

Data Files/Data Elements	Derived From
COMPUTED STUDENT DATA ELEMENTS:	
Age	Birthdate (S 1)
Credit/Noncredit Status	Weekly Student Contact Hours (S 17) Positive Attendance Enrollment (S 7)
Enrollment Pattern	Weekly Student Contact Hours (S 17) Positive Attendance Enrollment (S 7)
Full-time/Part-time Status	Total Units Attempted (SE 7)
ITV Status	Units Attempted (S 15)
Residence Status	Residence Code (S 9)
Total Units Attempted (SE 7)	Units Attempted (S 15)
COMPUTED COURSE ELEMENTS:	
Average Census Enrollment (CE 1)	First Census (C 1) Second Census (C 2)
Positive Attendance Enrollment	Total Student Contact Hours (C 20) Total Section Contact Hours (C 19)
Weekly Student Contact Hours (WSCH)	Total Section Contact Hours (C 19) Total Student Contact Hours (C 20) Average Census Enrollment (CE 1)
Weekly Student Credit Hours (WSCRH)	Units of Credit (C 21) Average Census Enrollment (CE 1)

* All data derived from USRS, and all derived data located at Analytical Studies -- Teale.

Table A-3

OTHER CCC DATA SETS AND SPECIAL SURVEYS:
DESCRIPTIONS AND SOURCE

Data File	General Description	Administrative Location	Data Source
Student Enrollment Fee Revenue		Fiscal*	CCFS-323
HSPS Direct Excess Cost Application		SFP Datapoint*	SS/SFPH-SS-2
Fee Waiver/ Fee Credit Supplement	Issues related to administration of fee waiver/fee credit and coordination with Financial Aids Office	Fiscal: Teale	Special Survey
Financial Aid Workload and Staffing	Financial Aid staffing workload; Board Financial Assistance Program—Staffing Publicity and Procedures	Fiscal: Teale	Special Survey
HSPS Student Count Update	Number of students provided full and limited services (by disability)	SFP Datapoint* Analytical Studies Unit —(Transmitted Manually)	SS/SFH-SS-6
HSPS Mid-Year Direct Excess Cost Data	Student data, costs for services and instruction by object expenditure categories, ADA by disability, total program income, direct excess costs, program line item budget, etc.	SFP Datapoint* Selected Elements Transmitted Manually to ASU-Teale	SS/SFPH-SS-1

*Data available on the office computer system.
These data cannot currently be merged with data files at the Teale Data Center.

Table A-3
Continued

Data File	General Description	Administrative Location	Data Source
HSPS Final Excess Cost Report	Student data, costs for services and instruction by object expenditure categories, ADA by disability, total program income, direct excess costs, program line item budget, etc.	SFP Datapoint*	SS/SFPH-SS-3
EOPS Budget and Accounting Data	Budget Approval Request, adjustments, mid-year expenditures, Final Report (all listed by object code and distinct continuation type)	SFP Datapoint*	SFPE A-1
EOPS Project Plan	Statistical summary of project plan (personnel, students, discretionary costs—all by component); listing of activity and function numbers	SFP Datapoint*	EOPS #10; EOPS #12
Special Projects: Employer-Based Training	What districts request for special funds in Employer-Based Training Program—$, programs, source of fund	Voc. Ed.*	No report #
Special Projects: In-Service Training	Districts collect data on training Vocational Education and other instructors. Includes $ amount, number of instructors, type of program	Voc. Ed.*	No report #

*Data available on the office computer system.
These data cannot currently be merged with data files at the Teale Data Center.

Table A-3
Continued

Data File	General Description	Administrative Location	Data Source
VEA Accountability Data	Includes allocations and expenditures of Voc. Ed. money by program	Voc. Ed.*	Compilation from multiple sources
VEA State Planning Data	Contains application process, allocation formula, and allocation run	Voc. Ed.*	Compilation from multiple sources
Evaluation of Vocational Education Programs and Services	Contains evaluation items rated by three groups: 1) Instructors, 2) Administrators and 3) Advisory Committees. Items rated included goals and objectives, equipment, instructors' follow-up	Consultant/ Stanford Computer	Special Study
Using Student Performance in Planning	Student evaluation of skills learned, employment information, employment follow-up program computers, goal statement	Consultant's Computer/Colleges	Special Study
Special Populations: Longitudinal Study	Includes handicapped, displaced homemakers, limited English speaking, data on performance/completion	Consultant/Orange Coast College	Special Study

*Data available on the office computer system.
These data cannot currently be merged with data files at the Teale Data Center.

TABLE B-1

USE OF DATA FILES

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA*	VERIFIED EXTERNAL USES OF DATA
1. STUDENT DATA		
First Census Enrollment		
Birthdate	Finance - enrollment projections CPEC - specific studies	CPEC: Yes Finance: Yes
Citizenship Code	Finance - indirect use; exclude nonresident aliens CPEC - data base; federal surveys VEDS - reporting category (nonresident alien)	CPEC: Yes
College of Last Attendance	Finance - enrollment projection model CPEC - data base	CPEC: Not currently used Finance: Yes
		Finance: Yes
Enrollment Status	Finance - enrollment projection model CPEC - data base; federal surveys and special studies IPEDS	CPEC: Yes
High School Education	CPEC - data base	CPEC: Not currently used
High School of Graduation or Last Attendance	Finance - enrollment projection model CPEC - data base External Requests	CPEC: Yes Finance: Yes
Positive Attendance Enrollment	Finance - space requirement projections; CCC office uses to classify students	Finance: Yes

*Uses within the CCC were verified; uses by external agencies were "presumed"

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Residence Code	CPEC - data base Finance - used for special analysis, e.g., feed flow Districts - student immigration	CPEC: Yes Finance: Yes
Sex	CPEC - data base, special studies, OCR compliance survey, IPED, HEGIS, federal reporting Finance - data base; enrollment projection model VEDS External Requests OCR Supplement	CPEC: Yes Finance: Yes
Student-Declared Major	OCR Supplement - discipline categories enrollment	CPEC: Will use for next year if refined; local codes Legislature: info desired
Student Goal	CPEC - unsure; 30% of colleges report	CPEC: Not used Legisl: Info desired
Student Level	CPEC - data base Finance - CCC office generated enrollment reports	Finance: Yes CPEC: Not used, "needs to be cleaned up"
Total Potential Hours of Attendance (TPHA) Positive Attendance Courses	CCC office - positive attendance projections	
Units Attempted	CPEC - data base Finance - data base CCAF 130 - College of First Attendance - determine credit/noncredit; full-time/part-time student status CCAF 131 - Source of first-time student transfer report	CPEC: Yes Finance: Yes

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Veterans' Aid Status	Finance - use unsure	Finance: Not used
Weekly Student Contact Hours	Finance CCC Office Report - classifies students enrolled in full-term credit courses. Annual publication on enrollments in PSE.	CPEC: May begin to use this Finance: Does not use; uses 320 instead
Vocational Student Enrollment		
Cooperative Education Status	Department of Education - VEDS; CCC Office reports to DOE	
Consumer Homemaking Education Program Code	Department of Education - VEDS CCC Office - factor in allocation formula if used in Consumer Homemaking in economically depressed areas	
Instructional Setting, Academically Disadvantaged Student	Department of Education - VEDS CCC Office - total number used in allocation	
Instructional Setting, Economically Disadvantaged Student	Department of Education - VEDS CCC Office - total number used in allocation	
Instructional Setting, Handicapped Student	Department of Education - VEDS CCC Office - total number used in allocation	
SAM Completion Status	Department of Education - VEDS CPEC - special studies: specific program completion and demographics Industries - Fire Science Colleges - for analysis related to starting new program	CPEC: Not used directly; not on data base

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
SAM Student Major	Department of Education, CPEC, Industries, Colleges — SAME AS ABOVE	
SAM Vocational Program Code	Department of Education - VEDS CCC Office - program approval process	
VEA Funding for Disadvantaged Students	Unsure of use	
EOP&S Student Data	CCC, EOPS: Administrative Use (all data elements) Legislature (all data elements)	Legisl: "Data in response to legislative and control agency requests for descriptive data." (all elements)
Academic Standing, Beginning Academic Standing, End Cal Grant B Counseling Hours EOPS Grant EOPS Status EOPS Workstudy Money Earned GPA for Academic Year National Direct Student Loan Non-EOPS Workstudy Money Earned Other Financial Aid Pell Grant Pell Grant Eligibility Status Scholarship Supplemental Educational Opportunity Grant (SEOG) Total Financial Need Total Workstudy Hours Worked Tutorial Hours Units Completed		

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
HSP&S Student Data	CCC, HSP&S: Administrative Use (all data elements) Legislature (all data elements)	Legisl: "Data in response to legislative and control agency requests for descriptive data." (all elements)
Age of Onset, Earliest Disability Department of Rehabilitation Client Disability and Service Financial Aid Status Handicapped Student Programs and Services Status Instructional Setting Off Campus Special Instructional Setting Services Requested/Used Units Completed		
2. STAFF DATA		
Actual Annual Salary for Preceding Year	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature Districts - Annual Report on Staffing and Salaries for collective bargaining; completing reports for CPEC	CPEC: Yes Legisl: Yes (related to FT/PT issue)
Additional Time Required on Campus	Not used (optional)	
Annual Salary	CPEC - federal EEO-6 report to EEOC; Faculty Salaries: Workforce Analysis Report - to Legislature; IPEDS Districts - Annual Report on Staffing and Salaries for collective bargaining; completing reports for CPEC	CPEC: Yes Legisl: Yes

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Annual Stipend	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature; IPEDS	CPEC: Yes Legisl: Yes
Assignment Full-time Equivalent (FTE)	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature; IPEDS CCC Office - Nussbaum study of part-time faculty Districts - Annual Report on Staffing and Salaries for collective bargaining; completing reports for CPEC	CPEC: Yes Legisl: Yes
Average Hourly Equivalent Compensation	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature Districts - Annual Report on Staffing and Salaries for collective bargaining; completing reports for CPEC	CPEC: Yes Legisl: Yes
Average Hourly Equivalent Compensation - Certificated Assignment for Classified Employee	CPEC - Faculty Salaries	CPEC: Yes Legisl: Yes
Average Hourly Overload Compensation	CPEC - Faculty Salaries Districts - completing reports for CPEC	
EEO-6 Occupational Activity	CPEC - federal EEO-6 report to EEOC; Workforce Analysis Report to Legislature; New Hires and Separations; IPEDS Districts - completing reports for CPEC CCC Office - Nussbaum study of part-time faculty	CPEC: Yes Legisl: Yes
Employee Code	No external uses; used internally to aggregate different assignments	

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Employment Classification	CPEC - federal EEO-6 Report to EEOC; Faculty Salaries; Workforce Analysis Report to Legislature; IPEDS; New Hires and Separations CCC Office - Nussbaum study of part-time faculty Districts - completing reports for CPEC	CPEC: Yes Legisl: Yes
Employment Status	CPEC - Faculty Salaries; Workforce Analysis Report to Legislature; New Hires and Separations Districts - reporting data to CPEC	CPEC: Yes Legisl: Yes
Funding Source	Not used - data not available	
Months of Employment	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature CCC Office - Nussbaum study of part-time faculty Districts - reporting data to CPEC	CPEC: Yes Legisl: Yes
Racial/Ethnic Background	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature; New Hires and Separations; IPEDS	CPEC: Yes Legisl: Yes (ties in with a CPEC study)
Required Office Hours	Not used (optional item)	
Sex	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report - to Legislature; New Hires and Separations; IPEDS Districts - reporting data to CPEC Legislature - to describe the workforce	CPEC: Yes Legisl: Yes (related to a CPEC study)

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
TOP or CSS Code	CPEC - Workforce Analysis Report to Legislature; Faculty Salaries Districts - reporting data to CPEC Legislature - bill analysis; number of faculty in discipline areas	CPEC: Yes Legisl: Yes (for salary)
Type Assignment	CPEC - federal EEO-6 report to EEOC; Faculty Salaries; Workforce Analysis Report to Legislature CCC Office - Nussbaum study of part-time faculty Districts - reporting data to CPEC	CPEC: Yes Legisl: Yes
Categorical/Contracted Assignment	Not used - data not available	
Weekly Hours	CPEC - federal EEO-6 report to EEOC; Workforce Analysis Report to Legislature; Faculty Salaries CCC Office - Nussbaum study of part-time faculty Districts - reporting data to CPEC	CPEC: not used - candidate for future use
Year of Birth	CPEC - federal EEO-6 report to EEOC; Faculty Salaries Legislature - bill analysis (aging faculty) Districts - reporting data to CPEC	CPEC: not used - candidate for future use

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
3. COURSE DATA		
Course Activity Measures		
Active Enrollment - First Census	CPEC - proxy for actual enrollment; course reports for Legislature CCC Office - program approval process; produce detailed course inventory; historical data used to validate course inventory Districts - course profile	CPEC: Yes Legisl: Yes
Active Enrollment - Second Census	CPEC - course report to Legislature; proxy for retention data in special studies CCC Office - program approval process Districts - course profile	CPEC: Yes
Course Identifier	CCC Office - internal use; linking files	
Credit/Noncredit	Finance - audits to identify approved noncredit courses CPEC - annual report on program course approval Districts - comparative purposes CCC Office - program approval process	CPEC: Yes Finance: Yes
Day/Evening Class Code	Finance - facilities projection and planning CCC Office - course profile	Finance: Yes
Method of Instruction	CPEC/Finance - facilities planning Legislature - identifies television courses CCC Office; Program Approval and Evaluation - course profile	CPEC: Yes Finance: Yes ITV students included from enrollment projection Legisl: used (very important)

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
SAM Priority Code	College - send with course classification for update and reclassification Voc Ed - for assessment of current inventory	
Section Date - Beginning	Use not sure	
Section Date - Ending	Use not sure	
Section Enrollment Accounting Method	CCC office - internal use: attendance accounting	
Section Identifier	CCC office - internal use only	
Section Meeting Days	CCC office - internal use	
Section Meeting Facility - Building	CCC office - internal use	
Section Meeting Facility - Location	CCC office - internal use: to identify off-campus work	
Section Meeting Facility - Room	CCC office - internal use	
Section Meeting Time - Beginning	CCC office - internal use	
Section Meeting Time - Ending	CCC office - internal use	
Total Section Contact Hours	CPEC/Legislature - CCC office course report to Legislature	CPEC: Yes Legisl: Yes (very important)
Total Student Contact Hours	CPEC/Legislature - course report to Legislature	CPEC: Yes Legisl: Yes
Units of Credit	CPEC/Legislature - course report to Legislature	CPEC: Yes Legisl: Yes

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Course Classification Code	CCC - maintain course inventory	
Course Repeatability Code	CCC - maintain course inventory	
Course Transfer Code	CCC - maintain course inventory	
Course Inventory	CCC - Program Eval.: Report to Legislature on Instructional Activity	
Noncredit Inventory	CCC - Program Eval.: Internal use (all elements)	
Application Data		
Course Title		
Units		
Certification Code		
RAVEC Certification		
Type Noncredit Course		
Minimum Sessions		
Special Program Code		
Course Activity Code		
Classroom Hours		
Primary Method of Course Evaluation		

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
Teaching Materials		
Method of Instruction (10 Occurrences)		
Demonstration of Need		
Course Objectives		
Program Inventory	CCC Program Eval. - Internal use (all elements)	
Units Required for Certificate		
Degree Type		
Year Approved		
Year Operational		
Year Deleted		
Local Program Title		
Conjoint Program		
Noncredit Program		
4. FACILITIES DATA		
Space Inventory		
(room and building use, condition of facilities, assignable square feet, ownership, location, age)		

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
	Building Summary List Mostly internal	
	Room Use Summary CCC office CPEC Finance Legislature	CPEC: only used for specific studies related to off-campus centers and new campuses Legisl: no recalled use
	Taxonomy of Program/Summary CPEC CCC office Finance	
	Classification of Service and Support CCC office	
	Program Summary by Room Use CCC office	
	Building Inventory Summary Legislature - earthquake studies	Legisl: no recalled use
	Discipline List - Sequenced Room Use CPEC Legislature Districts - submitting five-year construction plan CCC office - reviewing district plans	CPEC: only used for off-campus centers studies Legisl: no recalled use
	Room List - Room Use CPEC - backup data in capital construction analysis CCC office - discrepancy checking	CPEC: only used for off-campus centers studies

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
5. FISCAL DATA		
Apportionment Data		
Student Attendance Report	CCC Fiscal - general apportionment; report to Legislature on contact hours	Finance: Yes
Correction to 320 Form	CCC Fiscal - modify ADA	
Local Property Tax Revenue Data	CCC Fiscal - modify ADA	
Flexible Calendar Adjustment	CCC Fiscal - modify ADA	
Apprenticeship Hour Report	CCC Fiscal - funding rate per hour for apprenticeship	
Income and Expenditure Data		
Annual Financial and Budget Report	CCC Fiscal - program analysis 50% law Fiscal Data Abstract Controller - Financial Transactions Concerning California School Districts Local Districts	Controller publication: Yes
Expenditure by Activity		
Annual Financial and Budget Report: Expenditures by Activity	CCC Fiscal - expenditure by activity (instructional and non-instructional) Fiscal Data Abstract	

TABLE B-1 (Continued)

DATA FILES/DATA ELEMENTS	PRESUMED USES OF DATA	VERIFIED EXTERNAL USES OF DATA
6. GLOBAL DATA		
College Code District Code Student Record Number Report Period Taxonomy of Programs	Global data are used as identifiers in a number of data files. Their use is in conjunction with other data files/elements	

TABLE B-2

OTHER CCC DATA SETS AND SPECIAL SURVEYS:

USE OF DATA SETS

DATA FILE	PRESUMED USES OF DATA
Student Enrollment Fee Revenue	CCC: internal
HSPS Direct Excess Cost Application	CCC, ASU: run certain elements for allocation
Fee Waiver/ Fee Credit Supplement	CCC: specially funded projects-- for Board agenda item, other analyses
Financial Aid Workload and Staffing	CCC: specially funded projects-- for Board agenda item, other analyses
HSPS Student Count Update	CCC, HSPS : generate allocations
HSPS Mid-Year Direct Excess Cost Data	CCC: internal certain elements for allocation
HSPS Final Excess Cost Report	CCC, SFP : to retrieve funds (compared manually with budget)
EOPS Budget and Accounting Data	CCC, SFP : budget approval, project fiscal monitoring

TABLE B-2

Continued

DATA FILE	PRESUMED USES OF DATA
EOPS Project Plan	CCC, SFP : support budget allocation, form used for Operational Program Review
Special Projects: Employer-Based Training	CCC, Voc. Ed.: fund distribution; monitor and evaluation. Presumed User: Legislature
Special Projects: In-Service Training	CCC, Voc. Ed.: reports Presumed Users: Board Legislature
VEA Accountability Data	For joint report with State Department of Education Presumed Users: U. S. Department of Education Legislature
VEA State Planning Data	CCC, Voc. Ed.: Three year plan for vocational education in State
Evaluation of Vocational Education Programs and Services	Federal requirement that programs be evaluated every five years Presumed Users: U. S. Department of Education Legislature State Department of Education
Using Student Performance in Planning	Employment follow-up Presumed User: U. S. Department of Education
Special Populations: Longitudinal Study	Presumed User: U. S. Department of Education

Appendix C-1

Issues and Discussion from the Uniform Statewide Integrated Reporting System Users Committee

Comments included in this section were taken from the transcripts of the Uniform Statewide Integrated Reporting System Users Committee meetings held four times between April and June, 1985.

The comments have been organized according to ten major issues which arose repeatedly during discussion:

1) the need for a unique student identification code,
2) the need to improve file integration,
3) the need to improve the quality of data elements,
4) the problem of duplication in reporting,
5) the need for consistency in staff data file elements,
6) the need to imporve reporting and other forms of feedback from CCC,
7) the problem of reporting burdens in local districts,
8) the need to identify outcomes measures,
9) the need to provide adequate resources to support an integrated information system, and
10) the need to establish effective management structures to coordinate integration activities.

COMMON IDENTIFIER

There was consensus among participants that a "common identifier" or "unique identifier" is needed for student data files in order to link one file with another and to compare data across years. However, it was noted that this problem is not limited to CCC. UC also does not use a common identifier.

The logical common identifier would be the student's social security number. While the use of this number presents no technical or legal problems, policies and procedures for student notification and access would need to be put into place before collection of the numbers could commence. In addition, the committee was concerned about confidentiality safeguards.

COMMENTS:

SAM KIPP: ...If you could simply add one additional element to include all those listed dealing with demographics, all the other things could be derived very readily from the files themselves. The need for the EOPS file could be handled by an identifier presumably, because the EOPS file already exists with a good deal of information.

BUSTER SANO: I guess what you're saying, Sam, is that if you can tie the student to the specific class, and that class is coded by some discipline code, then a lot of these

needs could be addressed on that basis.

_____: (response to a question about what happens to a student who comes from Santa Monica, goes to UC, withdraws and goes to a state college) They're probably listed as a UC transfer student to CSU. That's the problem you have with anything short of a universal unique identifier system where those people can be linked longitudinally one year after another, regardless of which system they're enrolled in.

SAM KIPP: We don't have a unique identifier on any of our files. We have individual student data files, but it's been one of the sources of concern that all we can really talk about is net changes from fall to fall. Looking at those individual records and analyzing those characteristics, we can't link them at present...

RON DYSTE: I feel that we should be standardized to the point that on the applications that we submit, we submit what high school, what college -- CSS or some national or state organization has already put numbers on high schools and colleges. I'm trying to promote in the EOP community that we go back and show exactly the steps the person has taken to get where they're at. If we're going to link up with other agencies, either SSN or ID number is going to have to be universal enough to follow that student.

SAM KIPP: CSU is the only segment that I know of that

consistently does that longitudinal kind of tracking and retention. The problem is they lose them when they disappear from the CSU system. Right now, no one can tell you very clearly what happens to all those folks who disappear from one year to the next.

TERRY DUNN: One of the internal problems we have (at CSU)is a small number of our campuses don't use SSN's as student identifiers. They use Personal Identification Numbers. For the centralized records they supply us with a table that links the PINS with a SSN. That presents another place where errors can occur. Those errors cut down the integrity of the data for those campuses.

SAM KIPP: From campus to campus, UC uses different identification numbers. They may collect social security numbers, but they don't use that internally as their basic identifier, and I think in some cases, they don't collect them at all.

BUSTER SANO: Related to the automated portion of our reporting system, it was decided not to use SSN's because we had to set up internal policies and procedures within the Chancellor's Office if you collect them. I'm going to recommend that we do. The political climate has changed. Previously, we had to deal with confidentiality. We did the legal research, and provided we set up (appropriate) internal procedures, the Chancellor's Office can ask for SSN's.

IRENE BLUTH: I don't have problems with the unique identifier, but you need to make that recommendation that if one is used, it should include appropriate procedures to insure privacy. ...you have to be very careful how you use that information.

IRENE BLUTH: If we are going to track community college students by use of an identifier to see where they go, is that going to work for all of the segments (California ed system)? ...Our board is very interested in what's happening to our students. If there isn't that ability to get that information back to us, then what's the incentive to having a common identifier?

MARVIN ALKIN: Obviously, one incentive is to be able to produce data and reports about your system with less burden on you because there would be fewer requests for special reports.

IRENE BLUTH: Assuming you want it between community college districts -- your identifying number does not work between districts -- if the incentive is to have information within the system, it makes sense. And if we can get information back from the university system, it makes sense.

TERRY DUNN: The State University is very interested in sharing information with institutions that send students to

us. We are in the process of developing an intense performance report to send back to every high school that sends us five or more students -- containing information on what happens to their students when they come to a state university. We'd like to cooperate with community colleges in a similar way. If it was possible to do this kind of thing with a common student identifier, we'd be very happy to cooperate.

IRENE BLUTH: I think the statement should be broader to encompass that linkage and that cooperation.

KEN SAVAGE: I think we should put into our recommendation the whole matter of the common identifier for all segments, including high school, and work toward its achievement.

GORDON NEWMAN: Santa Monica does not use SSN's at all. We could not facilitate that until possibly spring of 1986, providing we had all the technical support.

BUSTER SANO: Catherine Close, agency legal counsel had been asked to search the codes and found that nothing prohibited collecting social security numbers, providing we establish policies and procedures to ensure against disclosure and access.

JOHN MEYER: ... the committee should recommend "flat out" that social security numbers be assigned with appropriate securities as the unique identifier.

------: individuals cannot be required to give social

security numbers. If they refuse, there's no recourse.

TERRY DUNN: CSU had students new to tHE CSU system assigned numbers if they did not have social security numbers. The Social Security Administration has a list of numbers they never use, the 900 series.

BUSTER SANO: There should be a system statewide that everyone adheres to. There are three key factors: 1) that the colleges really use a unique identifier for students, 2) a taxonomy or TOP code be used, and 3) assurance that the colleges really use "static" course identifiers.

LEN SHYMONIAK: You are going to need unique identifiers for staff to link staff and courses.

BUSTER SANO: Linkage of student to course is achieved through the course identifier, and the link of staff to course is through the TOP code.

BUSTER SANO: You need a staff identifier to be unique within the district so as not to mix up employees.... It is ideal to have the social security number identifier for staff already in place.

_____: We really need a common identifier. Without it, we cannot tie data files -- eg., EOPS and others.

SAM KIPP: It goes well beyond that. (It's a need for comparing years. We can only talk about net change -- can't now do longitudinal studies. CCC is not alone in

this. UC doesn't have a consistent unique identifier.

DIANE CUMMINS: A unique common identifier will be critical in examining transfer and retention. There are a lot of bills on this this year.

BUSTER SANO: There are no technical or legal problems (in implementing a common identifier). We just need to implement the policies and procedures. (There is a need to initiate procedures to notify students...

MARY ANN WOOD: At the individual college level, a big issue is confidentiality of information.

SAM KIPP: CCC certainly qualifies to get this information ... only need to put good practices into place.

_____: What about students without social security numbers?

SAM KIPP: We need a consistent pattern for creating identifiers in this case that applies to all segments.

_____: Could it be mandatory?

RON DYSTE: We could regulate it -- for CCC anyway. However, UC is like a Klingon starship with the shields up.

BOB ROCKWELL: For a lot of colleges, the student identifier is the social security number anyway -- like for us.

GORDON NEWMAN: We do not collect social security numbers. The unique identifiers we use have a meaning for us. But it wouldn't be hard to collect social security numbers.

IRENE BLUTH: There are some real concerns about reporting social security numbers because of all the information that can be accessed with it. I have personal concerns with it.

BUSTER SANO: The climate is different now, between the 1970's and the 1980's.

ED BUSH: There is also a need for social security numbers for staff -- especially part-time faculty. We would be interested in whether the "freeway fliers" are on overload -- this would be an important piece of information for local districts.

JOHN MEYER: Do we really need to trace personnel as if we were a single employer?

FILE INTEGRATION

There was concensus that much needed information could be derived only from the integration of various files. Advisory committee members felt that file integration should be a priority. However, file integration cannot be accomplished until a common identifier is implemented. Furthermore, some CCC units hesitate to include their data in a common system because they are concerned about funding and staffing.

BUSTER SANO: ...if coding were proper, then we could relate students to courses and instructors to courses, in theory from term to term or year to year. You could do the changes in proportion of student contact hours by discipline and program and TOP code... same with student contact hours; headcount by noncredit instruction; the percent of students that graduate -- we don't collect that data now that addresses completions or awards of degrees or certificates...

KEN SAVAGE: One of the values of looking at some of these factors is to try to standardize statewide what factors we are going to look at. And get our legislators and other people looking at the same kind of data so that we're able to have compatible planning. We can take something local-

ly, you use another set of factors and we each come up with our own interpretation -- apples and oranges. If we could standardize some of these things as far as an overall information system, it would be helpful.

MARVIN ALKIN: ...once there is a unique identifier, how can a system be developed to attain file integration of all data currently in TEALE? I'm personally opposed to the creation of data bases and linkages that may not be needed, used, or required. I'm more concerned with the development of the capability to do the linkages to meet the needs that exist -- then doing analyses based upon all these possible linkages. What is important is the capacity to link these data files where appropriate and where needed.

SAM KIPP: We're talking about staffing, courses, etc. -- things that might be needed for differential funding or something else -- maybe there is a single data base where you can integrate that, but for a lot of research and reporting purposes, there are a few sections that are needed. You have to have the capacity to make those links.

KEN SAVAGE: The basic data system -- the number of elements that will comprise this thing is not tremendously large. If we can establish the inter-relationship so we can go from one to the other, then we don't need to have the big record file.

LEN SHYMONIAK: Linkages can be made -- whether you integrate all those five files doesn't -- make a difference. If you have the identifiers, even with five separate files, you can link any data element you want with software.

____: You want to have the ability to link the files, and you would like to be committed to minimizing the redundancy of data -- the less redundancy, the better the integrity of the data.

_____: I'd like to see as a part of Phase II, an attempt to get resources committed for developing the software so that these linkages can take place.

IRENE BLUTH: ...As long as you are going to have a working committee of community college or Chancellor's Office staff and personnel people, that a similar recommendation ought to be incorporated that would have Chancellor's Office people working with fiscal officers to determine what elements in the fiscal data are either useful, logical, or reasonable and those that may be mandated, but have that same type of field input as you try to integrate fiscal data along with other files. Our association had a conference the early part of this month, and we asked that a committee be formed that would provide me with advice and some ability to have consensus of the business officers throughout the state in how we move ahead on information systems.... The primary areas of discussion seemed to reach consensus that those reports involved with fiscal

data should be integrated.... Some of the suggestions were that a consortium of CC's get together to develop the software package that would be used by everyone. ...There was also a feeling that part of the funding that all community colleges get requires some kind of fiscal reporting as a part of our general responsibility. What we want to see is a lessening of the duplication and more consistent application of data generally...

KEN SAVAGE: We need to emphasize the need for integration and coordination and simply say that the mechanisms need to be devised to assure the internal integration and coordination of reports.

RON DYSTE: (discussing the integration of 311 and 320) There is a great deal of concern among the Chief Student Services Officers to modify the way information on student services functions is reported. The taxonomy which is used by the deans (which was required by that group) is in many respects a wonderful piece of work. We have already decided that we are going to make some formal decision about whether that taxonomy should be used for statewide purposes or not... 311 is the budget and accounting sector only. The business officers alone cannot be involved in looking at integrating those two hard copy documents. There will have to be some program people in other areas involved to some degree.

KEN SAVAGE: (re: identifying code structure) ... the

structure that is now used in the taxonomy is based upon the TOP code, and it took quite a while to get to that state. It needs to be carried on to the financial area.

GARY COOK: There is a need to look at other aspects, especially plant maintenance and operation. There is a structure, and we (Fiscal Services) think it can be further disaggregated. We think that's the way it should be done.

JOHN MEYER: Has there been any discussion about using the student contact hours in the CAM (Course Activity Measures) report instead of ADA calculations, eliminating the 311 and 320 entirely?

LEN SHYMONIAK: The CAM report has total activities and is collected every term as well. When we get a good integrated system in which there is corresponding data elements, some of these things do not need to be documented at the local level.

BUSTER SANO: The only limit to strictly using CAM data is that it is not student sensitive, and there are certain exceptions within the reporting that require student-sensitive information, like independent study classes and the residence issue. However, by providing appropriate linkages between the student and classes in which the student is enrolled, theoretically, it can be done.

GARY COOK: It can be done through the information system -- the 320 -- since you are collecting hours by course

activity.

KEN SAVAGE: ...lack of coordination in the Chancellor's Office shows up on campuses as well. It is obvious that the necessary first step is the creation of an integrated information system.

BUSTER SANO: There are on-going attempts to integrate and to examine data elements. (he supports the idea of establishing working committees).

MARY ANN WOOD: Is it possible for us to talk about EOPS students in electronics?

BUSTER SANO: An identifier would be needed: student characteristics, student activities, enrollment in classes, class characteristics.

_____: Is one of the things we're supposed to be doing, linking these (data which are not on microcomputers)?

BUSTER SANO: Stan ding alone, microcomputers aren't that much of a problem. Integration can be done. But physical integration is one issue; the logic of integration is a whole other issue. It is important for us to know why it's not integrated. (These data elements were) just started independently, not coordinated and planned.

MARY ANN WOOD: Fiscal data should be tied to something. The bottom line is what it's costing you. We must tie students to activities to costs. Form 311 and

Course Activity measures should be merged. Forms you do every year should be merged to course and student data.

GARY COOK: I don't (and might not) rely on other's data. I can't afford to be tied to an underfunded, understaffed system. I have to get apportionments out and they have to be accurate.

BILL HAMRE: It's not serious unless someone's calling you on the phone.

GARY COOK: Simple reports are easier to do by hand than to ask an understaffed, underfunded group working the system to do it. Part of the problem is how the data are collected -- eg., point-in-time vs. annualized.

____: There is a local integration problem, too: definition of data, different groupings.

BUSTER SANO: Recordkeeping is separated at the local level. It may be that the goal of file integration is not appropriate?

MULTIPLE: Oh yes it is.

BUSTER SANO: The state should have enough detail in the system to meet whatever groups are requested.

____: We had the same problem locally. In every case, problems were data problems. We published the data and they were corrected. They made people look bad. Almost

all were TOP coding problems. There are extreme differences/variations as to where courses are placed under TOP. There is the problem of relocated instructors. Personnel does not necessarily change TOP codes. Some schools are still using CID codes.

QUALITIES OF DATA ELEMENTS

The participants discussed data elements which are of little apparent use and those which are ill defined. Most elements have some bonafide use either to CCC or to other agencies. The "student goal" element is not currently used due to unreliable reporting. However, the feeling was that it may have potential utility given adequate reporting. Advisory committee members would like to see a systematic xamination of alldata elements to eliminate those with little utility.

SAM KIPP: "Wouldn't it be nice to know" isn't enough reason for having a data element. We have had several reviews of requested elements. (But it still isn't clear that all elements are needed.)

MARVIN ALKIN: The data elements that were found for which there is no apparent use are 1) high school education...

BUSTER SANO: That element asks whether or not the student graduated from high school or received a GED or didn't graduate.
(The group decided to keep the data element with possible modification as suggested by Ron Dyste, to include major in college preparation courses, possibly including high school GPA.)

MARVIN ALKIN (continuing): 2) some need to refine the

student-declared major. (The group agreed.)

MARVIN ALKIN (continuing): 3) student goal -- because the data aren't all there.

BILL HAMRE: Only ten percent of the records contain "student major" and "goals." Goals are sometimes locally coded.

SAM KIPP: We don't use these data. There is too little data. It's unreliable.

RON DYSTE: It's worthless.

___: (However, there is a) very definite need for this data for any student receiving (federal) aid.

SAM KIPP: It is a critical ingredient of matriculation to the extent implemented, but the definition would have to be changed -- and it would be.

RON DYSTE: The data are needed for EOPS and Handicapped. (Would we) use it? Absolutely not. It's not usable, given the different definitions.

____: Another problem is the element values students choose. Students may have two goals but can only report one.

BOB ROCKWELL: A goal, realistically, needs to be crossmatched to what students are doing to achieve that goal.

RON DYSTE: The general feeling is that the selections in the element are not good enough to capture the differences among students as to what goal they're pursuing.

MARVIN ALKIN (continuing): 4) veteran's aid status -- Finance used to use the element because of all the veterans attending CC's, but that is not now the case. 5) weekly student contact hours -- Finance uses 320 instead. 6) VEA funding for disadvantaged students -- voc ed doesn't use it...

DIANE CUMMINS: there has been a change in the federal regulations, and it will return to prominance.

MARVIN ALKIN (continuing): 7) required office hours from the staff file and required hours on campus.

BUSTER SANO: It was in the original set of data elements, but after the first year, it has not been collected.

_____: These need to be more concisely written. You're attempting to do two things: 1) to get the people together to discuss the elements they're reporting and to come up with a better definition and 2) to review what is being reported and perhaps eliminate things that are reported.

DUPLICATION IN REPORTING

Duplicate reporting has beenthe tradition within the CCC system, in part as a consequence of the absence of common identifiers and in part as a result of lax reporting requirements. Units within the system jealously guard the data that is essential to them. A unique identifier should considerably relieve the burden of duplicate reporting by local districts.

MARVIN ALKIN: Our analysis of the data files and elements shows that nearly all the data elements apparently have a useful purpose. The main problem appears not to be the usefulness of the data elements but the redundancy in the collection of data from unit to unit.

_____: Many of these could be eliminated by ... implementation of a system with unique identifiers and concern for providing resources to attain file integration.

SAM KIPP: A lot of our organizations end up with an overlap and duplication that looks like inefficiency, but it isn't. Because of the inability to get information and retrieve it, get it back out in usable form from the central system the splinter systems develop. They keep only the stuff that is absolutely essential to them, knowing full well that they can get it out when they need it. The inefficient blockages lead to redundancies.

MARVIN ALKIN: If there were unique identifiers and the ability to link, what would need to be added to the student data in order to be able to eliminate the 320? It turned out that it's not very much. It might be just one data element.

IRENE BLUTH: ...What we want to see is a lessening of the duplication and more consistent application of data...

KEN SAVAGE: ...It has been the traditional approach in the past to develop a duplicate system. To make that change-over requires adjustments of attitudes.

____: We need to remember that the field is saying cut down on the reporting, the duplication of reporting, ... that needs to come out a little stronger. You need to make a strong recommendation rather than just saying "wouldn't it be nice..."

IRENE BLUTH: Is one purpose so that we willhave to report a given element only once? Districts don't have a problem with reporting per se, but rather with reporting the same information under several different headings.

MARY ANN WOOD: Three to four years down the line, assuming a common identifier, could we eliminate same reporting? Studentsnow fill out an application for EOPS and then repeat the college application. It would be marvelous if they didn't have to do this.

GORDON NEWMAN: You don't have to do this now. (Colleges

could set up data systems that were compatible to reduce reporting.

RON DYSTE: I hope someone will talk about the purposes a statewide reporting system should serve. It should serve as a resource. If it did, a lot of problems, eg., data integrity, would disappear.

MARY ANN WOOD: EOPS data elements are now about two thirds financial aids and one quarter registrar's office data. Only about two elements are unique and significant to EOPS. Why don't they report their data and we report ours?

BUSTER SANO: A critical component of Phase II would be data reported locally by unit, which could be integrated here. However, some elements at the local level that have not been required to report are hesitant to report.

MARY ANN WOOD: The highest data processing priority in our district is that which is required -- eg., reporting 311. There are automated reporting discretions among business officers.

DATA ELEMENTS IN STAFF FILES

CCC staff and college personnel agree that data elements in the staff files are frequently interpreted differently by those in colleges and in the Analytical Studies Unit. Although regulations clearly define how raw data elements are to recorded, the discrepancies occur after the data has been aggregated for reports. The committee discussed several issues: 1) Will there be a need in the future to track staff hours, especially from one district to the next, 2) Should data be requested unless there is an identified need for it? 3) Is it important to use social security numbers as unique identifiers?

BILL PICKENS: One of the questions that is always asked is about part-timers and how many teach in more than one district. One of the arguments is that it is a very high number. AB 1550, the study of part-time teachers, was done by a special, one-time survey. Had a unique identifier been in place for longitudinal tracking, a large part of that study could have been done without the special survey.

ED BUSH: Possibly in the future, a staff identifier will be necessary in bargaining a statewide salary system.

LEN SHYMONIAK: Although the districts use their unique identifier, the Chancellor's staff has tried to do longitudinal tracking and invariably nothing can be done. I am

also concerned about the misuse of a social security number identifier.

MARVIN ALKIN: Staff data elements had varied interpretations within the field, causing a great deal of problems in the understanding of data. ...This is suggested as an alternative task for Phase II, assembling a working committee to reach an agreement on these elements.

ED BUSH: The staff elements are just not clearly enough defined, so I can't and won't use them to make comparisons.

BUSTER SANO: We went through two years of hard negotiating with a subgroup of CCJCA to develop the elements, and everyone felt there would still be some problems. I've never dealt with such a mess in my career. A lot of elements represent a compromise.

GORDON NEWMAN: The initial list was as long as this whole report. The battle was to get the list down, so fine points weren't attended to. Problem is that reporting requirements define individuals differently.

PAUL STEED: I'm generally pleased with the staff data and definitions. Part-time data should be annualized. People should recognize that all staff data re now is a snapshot in time.

ED BUSH: You have to keep an historical perspective on

this. There was a different climate ten years ago with respect to data collecting and reporting of automated information.

_____: TOPS, CSS codes... Our data are supposed to use the same codes, but somehow we lost our people in two departments after the data was processed.

MARY ANN WOOD: Related to the affirmative action plan, it seems that the ASU could be providing us with more derived data. Then they could complete the first half of the report for us.

BUSTER SANO: We could do it, but definition problems may result in data that doesn't look right.

MARY ANN WOOD: Due dates are a problem. A greater problem is the validity of data.

LACK OF APPROPRIATE FEEDBACK

Colleges rarely get reports, data, or other feedback from the information they submit to the Chancellor's Office. Therefore, some of them conclude that the information they send to CCC is not used. Committee members speculated that this perception may be a major reason for data inaccuracies and inattentive reporting. Specific suggestions were offered for making feedback useful to the colleges and to other users.

MARVIN ALKIN: ...a theme that came out of several of our meetings was about people expressing the concern that we are sending this stuff to Sacramento and we never see it again. We don't know what happens to it. Consequently, some of us don't pay a lot of attention to it, and the quality of the data would be improved if we really had some notion that it was in fact being used.

KEN SHYMONIAK: This should be highlighted. The source of this is indeed inadequate budget for data use and report publication. It's a system where there's some budgeting, however inadequate, for data input but almost no budgeting for data output.

MARVIN ALKIN: Reports are generated, but they are reports required by other agencies. ...The point is that not

enough reports get generated back to the field or an indication to the field about the kinds of reports that are generated using that data.

GORDON NEWMAN: All districts gather a tremendous amount of information and send it somewhere. Then, two years later, we get some of it back. We feel like we're sending it into a hold.

GARY COOK: part of the problem is that some data serve no local needs; it's just sent to the state.

SAM KIPP: I don't see a lot of creating useful products for local districts (by CCC).

SAM KIPP: One of the major requests we get is to kick back information to the individual institutions, typically, ones that are different from ones that may have reported the information. We've regularly provided that information to people, partly to check its integrity.

IRENE BLUTH: You're going to have problems with data integrity if the colleges have no use for data no matter what reports are generated.

JANICE EMERZIAN: I would agree to cleaning up the data and having a common identifier. But I want equal emphasis on ability to compare; we want to compare.

MARY ANN WOOD: Why not send inconsistent reports to locals? We don't know when we have a problem in our data.

JANICE EMERZIAN: HSP&S has a system in which they report back to each individual college statistically and through a breakdown, each of the areas we have in terms of student count.

LUCY SANDS: We do it for both EOPS and HSP&S programs. The data has not really been cleaned up. We felt we had to give them something.

BUSTER SANO: In automated reporting, we have a standard set of reports that go back to the districts.

BUSTER SANO: That set includes their own count.

SAM KIPP: The statewide information would be extremely useful. When we talk to Los Rios, they know what they've reported, but they don't know what their experience related statewide is. There is no control group to know how well you're doing or what it is that you're doing.

LUCY SANDS: Statewide is useful, but we also have the capability to do other kinds of reports such as by region. We have a code that we use for HSP&S and EOPS programs that defines what regions -- we've broken regions into ten -- and also have a code for urban, suburban and rural. This has never gone out to the field -- just for analysis.

GARY COOK: We do put out our Fiscal Data Abstract which reports district information as well as enrollment data and ADA. We send seven copies to each district, but not

to instruction.

BUSTER SANO: We often get comments and requests for feedback or output from data that we collect from the field. It would be very helpful to us at this point to hear from the field what kinds of information, form or format the information should be provided back so that we have a better feel of how to design output for you. Just to say you want information back is difficult to deal with. You could get more specific on how you wanted to see data provided back to you.

LEN SHYMONIAK: Another question is whether this is in the form of of an annual report ... or is it an ad hoc request. Ad hoc requests require a lot of resources on the part of CO staff. If you plan what the contents of an annual report will be and develop the software, you can update or refine every year and keep re-using it, and the user has some expectations what the data is.

MARVIN ALKIN: ...If when the CO asks for data, they would provide an indication on the request form noting the purposes for which the data would be used -- namely, the kinds of reports, Department of Finance, Legislature, CPEC -- that this might be reassurring to the districts that the data is, in fact, useful.

KEN SAVAGE: It ought to be addressed in a larger context. If we get into a systematic way of handling information

and we've agreed upon the elements that should be in that data system, we should be able to communicate to everyone what kind of information we're providing, what it's going to be used for. And we don't have to get down to each individual report because it could change.

_____: Probably the most important result from this is securing compliance from the field.

SAM KIPP: (information is justified) because there's something tangible you can buy back that's beneficial to them. If you can't, it doesn't matter how many legal requirements and other possible users there are.

IRENE BLUTH: The fiscal data report, for example, is widely distributed. The Department of Finance told us they would be using it. That's all the field needs to know -- that the data they're submitting is good and is being useful.

LEN SHYMONIAK: Every major file should have one annual report -- staff data, student or term-end report, course activity -- the minimum standard.

SAM KIPP: Focus on annual reports -- giving people back the fall 83 information doesn't really provide that much of a service. That may be useful, but it takes at least two years to look at trends, comparative data. If you only look at one year, it doesn't tell you very much about where you are or where you are headed.

LEN SHYMONIAK: (referring to Diane Cummins statement about there not being enough output from the system -- reports, etc. -- that is usable) There is concern about that. We have not invested resources in output of data. Diane remarked that resources are possibly one answer, but output also has to be a priority with the Chancellor's Office.

BUSTER SANO: (referring to incentives for local reporting) The positive incentives could be translated into the Chancellor's Office actually using the information in its day-to-day operation that would have some direct impact on the colleges.

Lacking obvious incentives for reporting, districts often set CCC reports as a low priority. There was an underlying sense that promises to reduce reporting requirements had not yet been fulfilled.

BUSTER SANO (agreeing with a previous comment): It is true that although enrollment data is due by January 1, it usually takes CC's until April to respond. It happens because enrollment reporting is voluntary. As priorities and resources tighten at the college, that reporting gets further down on the list.

RON DYSTE: With the number of reports that the districts have to do, they have other day-to-day work. Of course, money tightens up, loss of staff, and the state reports end up being put behind other priorities. There is no incentive, positive or negative, to turn that in on a timely basis.

BUSTER SANO: The Chancellor's Office has not been allocating as much in resources for follow-up.

RON DYSTE: I feel that all this is leading not only to a list of data elements, but to an implementation plan to achieve clear objectives if we want to simplify the burden on the districts -- maybe a one-time, short-term cost to

make the changes. I suggest the Department of Finance get a request explaining why that cost is there.

KEN SAVEGE: In order to have a good statewide information system, you have to have valid data coming into that system.

BUSTER SANO (re: R. Dyste's statement): Of equal importance is to provide some positive incentives for the districts to report the data. The positive incentives could be translated into the Chancellor's Office actually using the information in its day-to-day operation that would have some service or direct impact on the colleges.

BOB ROCKWELL: We should make sure new requirements reduce quid pro quo hardcopy reporting. This was promised in 1976, and we don't feel it was delivered.

LEN SHYMONIAK: The staff data file is among the most recently developed. That file generates most of seven previously generated reports. They are produced in ASU, sent to the districts; they sign off. This has greatly reduced reporting requirements. We have also eliminated some "nice to know" items.

GORDON NEWMAN: It sends chills up my back to hear us talking about new things (data elements, files, etc.).

OUTCOME DATA

Users want some indication of what students are getting out of their community college experience, and many feel that current measures of outcome are inadequate; there simply needs to be outcome measures included. Transfer, degree completion, vocational educational education program completion, and retention were discussed as appropriate measures.

_____: ...One area where there is a particular deficiency is outcome measures. That is thought as degrees and certificates awarded by CCs -- there might be a need to develop some additional measures for outcome measures. FIPSE outcome measures could optionally be used by colleges for examination within their own system, but which potentially could have implications for inclusion in Phase II.

LEN SHYMONIAK: ...a lot of outcome measures require either end-of-term or school year or end of program measurement. Timing is very critical. Do you hold up the whole report for the output measure, or do you have a separate reporting or separate file for just outcome measures? The minimum outcome of that will be more cost and data collection or duplicate collection.

SAM KIPP: (In response to a question about preferred measures) One is transfer; another degree completion;

completion in vocational education programs; retention and persistence.

LEN SHYMONIAK: We haven't addressed that issue locally or statewide as to how we do measure outcomes. ...If we get the system established so we have a way of identifying participants in the system, we may be able to add one or two elements at a particular point in time to have an ongoing process, updated periodically in terms of additional information.

SAM KIPP: Accountability is the bottom line. With Finance and the Legislature, you're being asked not how many students you serve, but what difference did it make. It's not unique with CC's.

PAUL STEED: ...there are some others you could add to it: success rate, completion of job skill course, how many units kept.

RON DYSTE: ...the kind of information we are asking about in EOPS and handicapped -- we need information about what students are getting out of their stay in community colleges -- whether they get grades, degrees, etc. We now ask for student characteristic data and data based indirectly on units completed. We don't ask for units completed except for EOPS students -- required grades are also required of EOPS students -- units completed is in the EOPS file; units attempted is in the general student file. I

have a great concern about getting information about how well our students are finishing whatever they're doing ...

RON DYSTE: ...I recommend that information be collected on students who are going to be served through transfer centers, and transfer centers are a part of the process of serving students from the time they come in and while they are making progress through the program -- which is what matriculation has been about...

KEN SAVAGE: No matter what we (the committee) say or think is a reasonable measure of outcome, they have to be considered in terms of others will view as an appropriate measure of success in CC education.

DIANE CUMMINS: One thing the Department of Finance looks for in terms of outcome measures is transfer centers. There certainly is interest on the part of the administration in knowing how many degrees are awarded.

RON DYSTE: There are two definitions involved in the discussion: 1) What is a transfer student and 2) is a transfer rate appropriate, right, or good.

_____: It (outcome measure) is a judgmental problem that nothing can be done about. However, "we" can find out who transfered.

KEN SAVAGE: We really need to be conscious of the politics of this issue. I appreciate Diane's concern about making too narrow an issue of what outcome measures should be.

However, the public perception of what a community college is is creating a problem now in that we don't have a way to prove we're successful -- we need to identify a reasonable outcome measure and build that into the public's mind.

JOHN MEYER: Another outcome measure which might be accessible to CC's might be grades awarded which give an indication of course completion.

RON DYSTE: A way to think about outcome would be to split it into parts: internal outcomes related to what the student is getting when he is on campus and then institutional or external outcomes about what's happening -- degree or transfer....My concern now is that we're stuck with bad data and big debates about appropriate outcomes.

KEN SAVAGE: We can work toward getting the information needed to assess the kinds of interrelationships of data. What we ultimately decide is going to be the basis for the Legislature to determine the success of the community colleges.

KEN SAVAGE: Most of the outcome measures are based upon information already in the system.

RON DYSTE: I disagree with Ken. Some data that is not collected includes units completed, grades, transfers, or completion.

GORDON NEWMAN: There should be caution and discretion in interpretation of the outcome measure for CC's. Four-year colleges have been extremely quiet about their outcomes.

ADEQUATE RESOURCES

Attempts to integrate and streamline the CCC information system must be supported by adequate resources for local districts and for CCC. There was general agreement that the present budget for data use and publication is insufficient. On the other hand, the Department of Finance is concerned about data quality and prior to (or concomitant with) the provision of additional funds would require assurance of improved data quality and reporting.

DIANE CUMMINS: The problem, I think, is with resources, and that is where the legislation comes in. We (DOF) think it is all moving in the right direction. Whether it is moving fast enough, however, is another question.

LEN SHYMONIAK: There is indeed inadequate budget for data use and report publication. It's a system where there's some budgeting, however inadequate, for data input, but almost no budgeting for data output.

DIANE CUMMINS: (in response to question -- Does DOF feel strongly enough about the current direction the Chancellor's Office is taking to back the need for resources?) There are never any guarantees on resources.

KEN SAVAGE: Resources are a key factor at the local level as well as in the Chancellor's Office in getting the system going.

LEN SHYMONIAK: If you are going to use incentives, provide it to all districts. There's no logic to say we're going to help the ones who have done the poorest job. It might get the job done, but people who have ignored this need and directed their resources in other directions will have it done for them. It's not a good incentive to maintain a good information management system. We so often reward poor management ... in the sense of being equitable ...if funding is to be provided (to add a data element), it should be to each district to help them with maintenance of their data system.

DIANE CUMMINS: DOF is not at present prepared to put more resources at the local level because they do not know enough about how reporting requirements will change, how they will be consolidated, and as that takes place, more resources, within the districts, should be available for new reports, etc.

MARVIN ALKIN: I feel that the strength and possibility of getting funding has to be associated with the newness of the endeavor and should not be looked at as seeking funding for things that are already in place.

LEN SHYMONIAK: (re: Diane Cummins statement that there is not enough output from the system that is useable.) We have not invested resources in output of data.

DIANE CUMMINS: Resources are possibly one answer, but

output also has to be a priority with the Chancellor's Office.

LEN SHYMONIAK: Any legislation or regulation ... is always linked to the data base, so it is not voluntary because evaluation and funding are going to be based on that information. The other element in your dealing with individuals systemwide is possibly bad data related to certain districts. We need to have more centralized data areas.

RON DYSTE: ...With the number of reports that the districts have to do, they have other day-to-day work... Of course, money tightens up, loss of staff, and the state reports end up being put behind other priorities. There is no incentive, positive or negative to turn that in on a timely basis.

BUSTER SANO: The Chancellor's Office has not been allocating as much in resources for follow-up.

RON DYSTE: I feel all this is leading not only to a list of data elements, but to an implementation plan to achieve clear obectives if we want to simplify the burden on the districts -- maybe a one-time, short-term cost to make the changes. I suggest the Department of Finance get a request explaining why that cost is there.

GENERAL MANAGEMENT

Restructuring information management will require concomitant changes in the CCC administrative organization. The committee suggested establishing a acentral authority within the Chancellor's Office to take charge of coordinating the integrated information system. Working groups could help define changes related to specific issues or data elements. Whatever management organization is established, it must be supported by sufficient resources andhave the full administrative support of the Chancellor.

BUSTER SANO: (re: need for new administrative organization) The ultimate question is where the responsibility for this whole enterprise (information integration) is going to wind up... what we are after is a systematic approach to information management.

KEN SAVAGE: ...lack of coordination in the Chancellor's Office shows up on campuses as well. it is obvious that the creation of an integrated information system is a necessary first step.

LUCY SANDS: Several groups are already looking at data elements. Their input has to bae part of the process.

GORDON NEWMAN: Someone has to pull these various groups together, and it could be done through association execu-

tives or presidents to determine what each is collecting in their specific area.

IRENE BLUTH: The fiscal officers have a committee which is going to deal with the kinds of data that are needed by fiscal officers...

LUCY SANDS: We as a group seem to have recommended that each area have a working committee. We have an HSP&S data committee working, there is a financial aid taskforce, and EOPS -- some changes are going to be needed in that system, and they do not have a data task group set up at this point. There's need for outcome and service information in that area.

MARVIN ALKIN: ...we wanted to preclude as much as possible committees that would be building up individual data systems oriented towards one particular function or activity. Part of the problem right now is that each area is trying to build its own system.

KEN SAVAGE: I concur. It has been the traditional approach in the past to develop a duplicate system. To make that change-over requires adjustments of attitudes.

BUSTER SANO: What if we recommend in the Chancellor's Office, with a functional committee such as this that really requires working groups in specific subject matter areas to coordinate with them. There really needs to be a cross-functional look at all of these activities and to coordinate all of these activities. There needs to be a

policy within the Chancellor's Office which forces people to coordinate these functions.

KEN SAVAGE: The problem of coordination is the biggest one and should be the leading one to consider.

RON DYSTE: M. Alkin has the authority to recommend that the Chancellor establish an agencywide inter-unit committee with people efficiently in authority to make decisions. The chair of this group in the Chancellor's Office should have the authority to resolve differences.

_____: What about using the existing organizational structure of the Chancellor's Office and empowering one of the unit heads to be in charge of the committee?

MARVIN ALKIN: I feel it would not be productive unless there were a visible and strong indication of administrative support and authority different from what currently is the case.

_____: If you look at the information industry literature,you find that all of them have moved towards creating a position of vice president of information management. To have someone to enforce the kind of coordination that is necessary -- maybe there should be someone in the organization that has that capability.

SAM KIPP: it is the responsibility of "Information Czar" to determine what the student enrollment record is going to look like and only collect once.

RON DYSTE: I'd like to make three points: 1) there ought to be a concensus, right from the Board of Governors, and among districts on what are the goals of an information system, 2) What are the data elements and how are they integrated, and 3) What is it going to cost to achieve this -- in both state and local costs. We should then come up with a plan that incorporates these questions as policy.

MARVIN ALKIN: If there were an information office which would have access to and an understanding of the full data set so that if a question is asked... the understanding of the full data set enables one to perceive the way in with the elements could be put together to acquire the information the individual wants. Presently, people must go to individual units inquiring about data, and they are told that there is no information acquisition office.

BUSTER SANO: Should the committee make some statement that the Chancellor's Office ought to start exploring the idea of system-wide exchange of information with CSU and UC?

RON DYSTE: That is really an unexplored area of another type of articulation of information. What the state needs is a center for educational statistics.

APPENDIX C-2

INTERVIEWS AT

EXTERNAL AGENCIES

Those interviewed: CPEC - John Harrison
Sam Kipp
Dorothy Knoell
Finance - Diane Cummins
Lynda Gage
Legislative Analyst - Robert Miyashiro
Hal Geiogue
Legislature - Bill Chavez (Assembly Education)
Paul Holmes (Senate Finance)

General Suggestions

The following are suggestions from CPEC, Department of Finance, Office of the Legislative Analyst, and selected Legislative staff interviews. They present points of view about activities to be accomplished in the next phase of the integrated information system. Those items starred were mentioned by multiple interviewees.

*1. Make sure all colleges report on time. Enrollment data is due January 1st. It usually takes community colleges until April to respond. As of the end of May 1985, eight schools' data are still missing.

2. Eliminate duplicative questions collected by different units.

3. Delete data elements that are not used.

*4. Develop more rigorous definitions for each element.

5. Data collected should be in the form of unique data elements. Derived information can be computed by CPEC or Chancellor's Office.

*6. Integrate the information located in different parts of the Chancellor's Office into one system located in one place.

APPENDIX C-2

Continued

*7. Establish a separate unit in the Chancellor's Offices for systems design, data collection, and data editing. Should be separated from Analytical Studies. Analytical Studies should use the data for publishing reports.

*8. Clean up the information before it is reported. CPEC has to edit the data before they can use it. Very little editing is done at the Chancellor's Office. CPEC calls colleges directly when they see discrepancies.

9. Finish putting course data on tapes and clean it up so that it can be used for analyzing groups of courses, e.g., remedial, transfer, etc.

*10. Link EOPS and handicapped data to regular student file by means of a student identifier. Need basic demographics on these populations.

11. Improve accuracy of staff data file. Get a sign-off from colleges because information is used in compliance reporting.

12. Design the data base so that it can respond to 60% - 80% of the information requests separately.

13. Need some way to flag the data if a college changes from a semester to a quarter system.

14. Collect and report data that portray differences and variety; don't simply think of community colleges as monolithic and talk about averages.

*15. Issue reports on a regular basis for wide circulation in the field. This would improve the accuracy of the information. Include Student, Faculty, and Program profiles.

*16. Have all requests for information from external agencies funneled through one office.

17. Next step should be a design phase. Should employ consultants to work with Chancellor's Office staff and field to come up with a design which includes a demonstrated need for each data element. Colleges should have a set period of time--3 years--to implement data collection. There should be a guarantee funding mechanism for collecting information. One system should remain in place for a period of years without change--suggest a ten year period. (CPEC- Harrison)

Additional Data Elements

Additional data elements and further modifications that some of the interviewees noted that they would like to have:

a. Unique identifier for each student (some suggested that it be social security number; others suggested that something else should be used).
b. Student major.
c. Matriculation and student goal information (currently collect this data but its quality is poor).
d. Socio-economic background or relative wealth indicator.
e. Degrees awarded or some indicator of those who qualify for a degree but just don't bother to get it.
f. Disabled student status, by type of disability--sight, ambulatory, etc.
g. Separate high school juniors and seniors from first-time freshman statistics.

APPENDIX C-2

Continued

h. Financial aid data on all students.

i. Include tangible outcome information (units enrolled/units completed).

j. Academic performance measure such as g.p.a.

k. Students on academic probation.

l. Race, ethnicity, and gender of staff (might differentiate Mexican from other Hispanic).

m. Units from other community colleges--so you could look at student flow.

n. Fall student profile information published to include age, sex, ethnicity, full-time, part-time, credit, non-credit.

o. Single record for every academic and administrative staff (without unique identifiers).

p. Profile of full-time faculty to include age, average salary, number of years of service.

q. Better course data (will be looked at in the context of Master Plan revision).

r. Data on telecourses.

TABLE D

ADDITIONAL DATA NEEDS:
USER REQUESTS TO CCC UNITS

Needs Specified	Potential User/Requestor	Relevant Existing Data
Long term "need" data	Various	earliest data on computer is 1978
ADA by TOP code	Various	weekly student contact hours data collected
Retention/Drop out rates	Legislature	2nd census and 1st census data does not correspond with last official drop date
Student Contact Hours by FT/PT Instructors	In-house and Legislature	None-only have Faculty Contact Hours
Changes in Proportion of Student Contact Hours by Discipline, Program	Legislature	Data believed to exist, but not reported
Student Contact Hours and headcount by noncredit instructional area	Legislature	Spot report only unreliable
Percentage of CC students that graduate	Reporters, Public	Extrapolations of CPEC Data on AA's awarded
Percentage of vocational education students that complete, transfer	Reporters, Legislature, Public	VEDS (not adequate)
Involvement of business in voc. ed. planning	Reporters, Legislature, Public	None (according to Public Information)

TABLE D

Continued

Needs Specified	Potential User/Requestor	Relevant Existing Data
Types of student disabilities (all disabled students)	In-house, if ACR 3 passes	Disabled students served by HSPS only
Demographic characteristics of students in Bilingual/ Bicultural Programs	Specialist, Bilingual/ Bicultural	No reliable way of identifying Bilingual/Bi-cultural from existing data
Demographic characteristics of students in specific occupational categories	Private Sector	
Sex, gender and racial ethnic composition of EOPS students	Department of Finance	Data available--unable to link
Degrees and certificates awarded by the Community College	Various	Not available in CCC--CPEC has this data
Gender and ethnicity of students by specific academic discipline by region	Air Resources Board	Academic discipline data not available (CCC used USOE categories to respond to request)
Data on Vietnamese refugees	CCC-reimbursement from other agencies	One special report done on this topic
Student goals	District Institutional Researchers Finance	Around 35% currently respond

TABLE D

Continued

Needs Specified	Potential User/Requestor	Relevant Existing Data
Age distribution of students in Agricultural degree programs	Peace Corps	Data available on courses but unable to match with degree programs
Nature and extent of "cooperative" programs with business, types of businesses	In-house Department of Commerce	Categorization by TOP Code loses some of the cooperative programs

ERIC Clearinghouse for Junior Colleges

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